SYNTACTIC SKILLS IN MALAYALAM SPEAKING CHILDREN WITH INTELLECTUAL DISABILITY

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CERTIFICATE

This is to certify that this thesis entitled **Syntactic skills in Malayalam speaking children with Intellectual Disability,** submitted by Vini Abhijith Gupta, for the degree of Doctor of Philosophy (Speech & Hearing) to the Mangalore University, Mangalagangothri, is the result of work done by her at Dr. M.V. Shetty College of Speech & Hearing, Malady Court, Mangalore.

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DECLARATION

I declare that this thesis entitled **Syntactic skills in Malayalam speaking children with Intellectual Disability** which is submitted herewith for the award of the degree of Doctor of Philosophy (Speech & Hearing) to the Mangalore University, Mangalagangothri, is the result of work carried out by me at Dr. M.V. Shetty College of Speech & Hearing, Malady Court, Mangalore, under the guidance of Dr. T.A. Subba Rao, Professor. I further declare that the results of this work have not been previously submitted for any degree.

Place: Mangalore

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CHAPTER 1

INTRODUCTION

Communication occurs when a sender transmits a message through symbols placed in a shared code that is understood by a receiver. Communicative competence requires that speakers apply the form, meaning and the purpose of language in ways that are appropriate to the social or communicative circumstances. Human communication surrounds us, defines our existence, supports our survival, describes our experience, and influences our understanding of the world around us (McLaughlin, 1998). Communication experience is developmentally slowed or distorted in several populations, such as in Children with Intellectual Disability (CWID). The present study uses analysis of syntax in language of children with Intellectual Disability (ID) to expand the understanding of their language profile. Further relevant studies on language development in Typically Developing (TD) and children with ID will be reviewed. The focus of the study will be on the children using Malayalam as their first language of communication.

Language is a systematic and conventional use of sounds (or signs or written symbols) for the purpose of communication and self-expression (Crystal, 1995). The child who learns a language achieves the ability to recognize and produce a set of sounds and learns how these sounds can and cannot be combined into possible words. It is important to understand that language and the expression of language are two different things. Language exists in the mind and it exists if it is expressed or not.

It is useful to understand language as a system of abstract symbols organized according to the basic rules that seem to be common to all languages known to mankind (Gleason, 2005 cited in American Speech-Language and Hearing Association, [ASHA], n.d). The five language domains are phonology, morphology, syntax, semantics and pragmatics. Phonology is the study of speech sounds (i.e., phoneme) of a language, including the rules for combining and using them. Morphology is the study of the rules that govern how morphemes, the minimal meaningful units of language, are used in a language. Syntax is the study of rules that pertain to the ways in which words can be combined to form sentences in a language.

Semantics is the study of meanings of words and combinations of words in a language. The final component Pragmatics is the study of language use in conversation and in broader social situations.

Among the five domains of language, syntax is considered as the central component. The term syntax is from the Ancient Greek - syntaxis a verbal noun which literally means arrangement or setting out together (Valin, 2001). It refers to the branch of grammar dealing with the ways in which words with or without appropriate inflections are arranged to show connections of meaning within the sentence. It specifies the order the words must take and the organization of different sentence types. It allows the individual to combine words into phrases and sentences and also to transform a type of sentence into other types. Syntax describes how sentences are constructed selecting from a variety of possible arrangements of elements in sentences.

Knowledge of the syntactic system allows a speaker to generate an almost infinite number of sentences and to recognize which sentences are grammatical and which sentences are not. According to Bernstein, et al. (1997) syntactic rules have two additional functions; they describe:

a. parts of speech (noun, verb, adjective) and
b. sentence constituents (noun phrases, verb phrases)

Language development is one of the most fascinating aspects of human life. Thus, it is important to know and understand how speech and language skills develop in TD children since it will help to clarify many of the disorders/ disabilities of speech and language especially those that start early in life such as ID (Subbarao, 1995). During the developmental period children soon after their first word approximately by 18 months of age begin to combine words into two-word phrases. By the time most utterances are two word long at about 2 years of age the young children begin to produce three-word utterances. Between 2 and 5 years of age children will develop the ability to use grammatical morphemes to produce basic grammatical sentence types and combine those into even more advanced grammatical constructions. As children produce longer sentences, they begin to build sentences according to the syntactic rules. Children acquire adult grammar by the age of around 12 years.

LANGUAGE DEVELOPMENT AND ID

This seemingly typical process of language development is affected in several children with disorders and disabilities. According to the World Health Organization [WHO] (n.d), 'Disability' is an umbrella term which includes impairment, activity limitations and participation restrictions in an individual. ID (formerly known as Mental Retardation) is a form of disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills originating before the age of 18 (The American Association on Intellectual and Developmental Disabilities [AAIDD]2010). ASHA (2012) supported the change from "Mental Retardation" to "ID" and recommended the elimination of classification by Intelligence Quotient (IQ) and severity level and recommended to use the AAIDD definition of ID. ASHA strongly urges the use of the term ID in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V), which would be consistent with the AAIDD definition. According to the American Psychiatric Association [APA] (2013), ID involves impairments of general mental abilities that impact adaptive functioning in three domains or areas. These domains determine how well an individual cope with everyday tasks. The conceptual domain includes skills in language, reading, writing, math, reasoning, knowledge, and memory. The social domain refers to empathy, social judgment, interpersonal communication skills, the ability to make and retain friendships, and similar capacities. The practical domain centers on self-management in areas such as personal care, job responsibilities, money management, recreation and organizing school and work tasks.

PREVALENCE OF ID

The prevalence of ID as reported in a meta-analysis of 52 international studies was 1.04% (Maulik et al., 2011). A follow-up meta-analysis of international studies reported the prevalence of ID in children/adolescents and adults as ranging from 0.05 to 1.55 % (McKenzie et al., 2016). According to Singh (2014) there are 31 million Individuals with Intellectual Disability (IWID) in India and of those about 35.29 % of

them are children. Kishore et al. (2019) reported that prevalence of ID reported in India is from around 1 to 32 out of 1000, depending on the case definition, methodology, and the population selected for the study. Russell et al . (2022) reported that summary prevalence of ID in India was established to be 2% taking into consideration the individual prevalence studies over t he last 60 years

COMMUNICATION PATTERN OF CHILDREN WITH INTELLECTUAL DISABILITY (CWID)

CWID are a heterogeneous group having non symbolic or symbolic communication disabilities. They may demonstrate spoken and written language disorders across the components of language previously described. (APA, 2013, cited in ASHA n.d). Unlike TD children, the development of language does not occur as expected in CWID. It is generally accepted that in CWID speech and language development is delayed when compared to TD children. This delay hypothesis suggests that developmental sequence of speech and language is similar and the factors underlying are similar. It is observed that CWID children have lower ceiling of speech and language as compared to TD children. Some studies (Subbarao,1995; Kumaraswamy, 2021) also emphasized deviance in the language development. Summarizing the results of speech and language development in CWID, Subbarao (1995) has confirmed delay hypothesis, and also reported certain syntactic deviance as compared to TD children. He has further noted that there is a set of bigger deficits in syntactic area, as compared to phonological and semantic aspects. Short sentence length, deficits in verb types, tense limitations and absent syntactic structures in conjunctions/predicate types etc. were also noted in that study. Language delays are evident in both areas of comprehension and expression.

Problems in comprehension

CWID may have difficulties in comprehending others' speech except for routinely used commands and actions as their knowledge of objects, persons and actions are often limited. They have (a) restricted receptive vocabulary (b) difficulty following multi-step commands (c) poor comprehension of abstract or imaginative vocabulary (d) difficulties in understanding indirect questions (e) problems

understanding ambiguous statements, and (f) challenges with riddles and humor etc. (Subbarao, 1992).

Patterns in expression

Around 40% of CWID are nonverbal. Some use gestures for basic needs but gesture variety is limited. Those who are able to use one-word expressions are common. CWID often fail to combine words into phrases and sentences. When sentences are used, they may resemble a telegraphic message. These problems are mainly because of the delay/ deficits in syntactic skills.

Some CWID have problems asking questions, and using negative and complex sentences. Most show severe problems in learning how to participate in a conversation. They exhibit problems in turn taking, maintaining a topic and ending a conversation. Further, conversation breakdowns are generally not repaired by CWID. These problems can be due to deficits in pragmatic skills (Subbarao, 1992).

For some CWID intelligibility may be impacted when they speak in sentences and phrases. Phonemic development is likely delayed. Many have problems in using appropriate supra-segmental features which may result in monotonous and unintelligible speech. Importantly, though, primary deficits appear to exist in syntactic development.

Frizelle et al. (2018) in a recent study examined language aspects in 33 children with DS, 22 children with cognitive impairment (CI) and 33 TD children who did not differ on raw scores on a test of non-verbal cognitive ability. Using a newly devised animation task, the study examined how well individuals with DS could understand relative clauses, complement clauses and adverbial clauses compared to other groups. Test for the Reception of Grammar-2, three measures of memory (forward and backward digit recall, visuo-spatial memory) and a hearing screen was administered on all participants. Results suggested that with the exception of intransitive subject relative clauses, children with DS performed poorly on all other complex sentences. They performed at a significantly lower level than children with CI and TD children. Also, children with DS had significant proportion of the variance over and above memory skills. The finding of the study suggests that children with

DS have a disproportionate difficulty understanding complex sentences compared to children with CI and TD children.

Koizumi et al. (2019) investigated conditions of syntactic development in native Japanese speaking CWID and suggested that syntax development in CWID was significantly delayed than in MA matched TD children. But as the MA advances syntax abilities started to develop much better in CWID.

INDIAN CONTEXT

The subject of ID has been a topic of interest among Indian researchers for the last three decades. In India most of the research in ID is carried out in the form of unpublished masters' dissertations and research papers (Karanth & Suchitra, 1993; Subbarao, 1995). Studies have pointed out that more than 80% of CWID show language delays and require professional intervention (Bharat Raj, 1987; Prabhu, 1968; Subbarao & Srinivas, 1989). It is essential that systematic, observational, and experimental study of language acquisition in children with different languages needs to be conducted in India, both for developing assessments and intervention programs (Hegde, 1990). Few attempts at creating language tests are present (RRTC & AYJNIHH, 1990; Linguistic Profile Test (LPT) Karanth, 1985; Test of Acquisition of Syntax in Kannada (TASK) by Vijayalaxmi, 1981). However, the existing tools and tests do not appear to fulfil the need of description of language behaviour adequately. Few tests (e.g. LPT) do provide a description, but are applicable to older age (6 years and above) groups and may not be suitable to test ID population. Likewise, few other tests (e.g. RRTC-AYJNIHH language tests, TASK) are applicable to younger population of Kannada speaking children, but suffer the disadvantages of any standardized test procedure. In any case, clinical reports of the usage of these tests are very few, making it difficult to choose them. Language sampling in natural and spontaneous situations and descriptive analyses are yet to be attempted, with disordered population like ID. Hence, at present no test provides clinically adequate information in assessment, particularly for planning intervention.

The present study attempts to obtain language samples in Malayalam speaking children. It is clear from these discussions, that in Indian contexts, we are far from saying that adequate tests or descriptions of ID has been carried out. Broad

based, naturalistic samples, descriptive linguistic analyses are important aspects and should be considered in Indian contexts. LARSP (Crystal et al, 1976 and 1989) is one such procedure, which has proved to be clearer in its methodology and has clearer guidelines on using the spontaneous language samples. The present study proposes to use the broad methodology of the LARSP procedure (Crystal et al, 1976 and 1989) to descriptively study the performance of Malayalam speaking ID children. The procedure will be outlined in the section on methodology.

STUDIES IN INDIAN CONTEXT

Pillai (1986) validated a language assessment tool in CWID and showed that CWID performed below their MA matched counterparts. Studies have shown a strong correlation between Mean Length of Utterances (MLU) and IQ (Naskar, 1993). In a detailed study, Subbarao (1995) analyzed phonetic, syntactic, and semantic aspects of 4 to 6-year-old MA matched Kannada speaking CWID and TD children. Detailed study indicated a delay in language development and differences in syntactic aspects. Other studies have focused on some aspects of language in CWID including: pragmatic aspects (Abraham et al., 2019; Bhat, 2002), phonotactic patterns (Rupella & Manjula, 2007), code mixing and code switching (Hariharan, 2008), semantic intentions (Bailoor et al., 2010; Krupa, 2009; Mahesh et al., 2008), phonological process (Rupella et al., 2010), and narratives (George, 2011). Few large scale research in language acquisition in CWID are carried out in Kannada language (Kumaraswamy ,2021; Subbarao, 1995) although a description of the Hindi syntax of CWID has been recently done (Kaur, 2019).

STUDIES IN MALAYALAM SPEAKING CWID

Radhika and Kumaraswamy (2010) did a comparative study of development of plural markers in Malayalam speaking CWID (4 to 6 years MA) and mental aged matched TD children (4 to 6 years) by using pictures as stimulus. Results suggested that TD children and CWID used all 4 plural markers given to them. The frequency of occurrence of all plural markers was less in CWID compared to TD children.

Nitha and Subbarao (2010) compared the development of present tense in markers in Malayalam speaking CWID (4 to 6 years MA) and mental aged matched TD children (4 to 6 years) by using picture naming description as thee stimulus. The performance of CWID was less in all 3 tense markers: present perfect, present continuous and present progressive. Results revealed that the present tense marker in CWID is poor compared to TD children.

Mohan and Kumaraswamy (2015) reported the acquisition of case markers in Malayalam speaking DS children of MA of 3 to 8 years using picture stimuli. The participants belonged to different age ranges and were assigned to 5 groups according to their MA: 3 to 4 years, 4 to 5 years, 5 to 6 years, 6 to 7 years and 7 to 8 years. The results showed that there is a general increase in acquisition as well as frequency of usage for some type of case markers children's MA increases.

Priyanka and Kumaraswamy (2017) conducted a study on the acquisition of PNG markers in children with DS with a MA of 4 to 6 and 6 to 8 years and reported that that as age increases the ability to use PNG markers improved.

Gupta et al. (2019) reported acquisition of participle construction in Malayalam speaking CWID with a MA of 4 to 5 and 5 to 6 years using picture stimuli. Results revealed that there is an increase in usage of participle construction with an increase in the MA of Malayalam speaking CWID. Gupta et al. (2019) also studied the acquisition of morphophonemic structures in Malayalam speaking CWID with a MA of 4 to 5 years and 5 to 6 years by comparing them with TD children in the same age range. Results revealed that vowel + vowel combinations are the morphophonemic structures that are primarily acquired in both groups. The consonant+ vowel combination and consonant + consonant combination were the least developed structures in the age range of 4 to 6 years and are likely to develop above 6 years in TD children.

Attempts in the past were made to understand the syntax skills of CWID in Malayalam language; however, most of these studies were limited to unpublished papers and masters' dissertations. However, the studies focusing on profiling syntax skills in Malayalam speaking TD children were limited. There is a lack of data available for both TD children and CWID. It is difficult to visualize and describe

Malayalam syntax patterns in CWID. Hence to overcome the dearth of literature in this area, Speech Language Pathologists (SLPs) constantly need to translate language data on syntax obtained from either western studies or from children using other Indian languages like Kannada and Hindi. This tendency leads to serious drawbacks in assessment and therapeutic intervention for children using Malayalam as their mother tongue. For example, Hindi and Malayalam language differs in terms of phonological, semantic and syntax aspects of language. As a result, if the data obtained on syntactic skills from Hindi speaking children is used as a reference for Malayalam speaking children, there will be discernible errors in confirming the diagnostic interpretation, assessment and intervention of these children. Thus, it is essential that systemic, observational, and descriptive study of language acquisition in CWID needs to be conducted, both for developing assessments and intervention programs (Hegde, 1990).

The prevalence of ID in Indian children suggests that it is important to assess, describe and construct a linguistic profile based on syntax for Malayalam speaking CWID in Kerala, which is the 13th largest state by population located on the south western Malabar Coast of India has maximum Malayalam speakers. Malayalam is one of the 14 regional languages and 22 official languages of India and stands in the 8th position according to the total number of speakers. It is the major language spoken by 38 million people in Kerala and Lakshadweep islands from the west coast of India. Naturalistic samples of descriptive language analysis in Malayalam speaking CWID have not been systematically gathered. The present study is one such attempt at describing the language behavior of Malayalam speaking CWID using natural interaction samples focusing on syntax analysis to assist in the which is envisioned to figure out the problems in assessment, diagnosis and management of communication skills using appropriate syntax. The present study followed the guidelines and modifications provided by Subbarao (1995) who completed a comprehensive language analysis of Kannada speaking CWID, using the overall theoretical guidelines provided by Language Assessment, Remediation and Screening Procedure [LARSP] (Crystal et al., 1976 and 1989).

CHAPTER 2
REVIEW OF LITERATURE

Research in the area of communication, with reference to ID has shown promise in the past decades in India, in particular, through empirical studies of TD children. Understanding of language profiles of CWID has influenced other aspects of development such as cognitive development (Kiernan, 1985). Another influence is estimating of language therapy goals in Indian languages. Such improvements have influenced demands for effective and evidence based approaches to communication intervention (Karanth & Suchitra,1993). However, the need for profiling of language abilities of CWID is required in many languages spoken in India. The present study investigates the syntactic profiling of Malayalam speaking CWID. The following sections will review the relevant literature and examine theoretical considerations in language acquisition, language acquisition studies in TD children and language acquisition studies in CWID with a focus on syntax.

THEORETICAL ISSUES IN LANGUAGE ACQUISITION

Evolutionary changes have occurred over the past four decades in the theories of language acquisition that help us understand how the various components of language emerge. Each theoretical view addresses certain aspects of language more directly than others. Some theories focus primarily on the function of language and others are more concerned with the structure of language, while others consider the connections between cognition and language and still others attend to the environmental factors as facilitators in the acquisition process.

During the mid-1950's Chomsky (1957) and Skinner (1957) produced widely differing accounts of language development. The Chomsky view point is generally referred to 'nature' and the Skinner view point is generally referred to as 'nurture. The periodic changes of emphasis seem to be influenced by the research being done at the time and whether it was done in the linguistic or psychological tradition. Awareness of theoretical themes and their historical sources allows language specialists to evaluate current methods and procedures and to choose among them judiciously.

Although the extreme points of view may no longer be held by theorists, these positions continue to influence thought and application.

Chomsky (1957) concentrated on syntax as the central phenomenon of language and sought to explain how it was developed and codified and devised the Transformational Generative Grammar (TGG) theory to explain the production of an unlimited number of grammatically acceptable sentences with a finite number of rules. By using these 3 rules (phrase structure rules, deep structure rules and transformations) it is possible to create an unlimited number of sentences. In contrast, Skinner (1957) placed much more emphasis on functional aspects of language. He recognized that spoken responses could serve a variety of social functions, in particular "mands" which included asking, requesting, demanding or commanding and "tacts" which covered naming and describing. Skinner's other two categories were echoic responses, in essence direct repetitions or imitations and "intraverbals" which included elaborations, comments and other responses which related to the context of exchange.

The term "acquisition" was used by the nativists who described the development of language in children as a process in which children have innate capacities for linguistic knowledge, interact with experience and develop language automatically, naturally, effortlessly and quickly (Mc Neil, 1970). Language, according to this theory is regarded as a biological phenomenon - the product of evolutionary specialization. Hence, a child requires only a certain amount of language to activate this inborn knowledge. This innate Language Acquisition Device (LAD) was first described by Chomsky and later elaborated on by McNeil (1970). The nativists arrived at the concept of innate language because of the regularities in language behavior, the complexity of language, the universal features across languages and the creative aspects of language.

Some theories have emphasized the primary role of semantics on the form of language One of the earliest and most often cited generative semantics theories was developed by Fillmore (1968). Fillmore's case grammar is designed to explain the importance and influence of semantics on the form of language. Fillmore suggested that beneath deep structure than that Chomsky (1957) proposed is a level composed of universal concepts that determine how nouns and verbs are related to one another.

Chomsky (1957) and Fillmore (1968) share an important view relative to language production. Each believes that language production is a generative process, and that any theory of language acquisition must account for how language is generated.

The information processing theory (Bates & Mac Whinney, 1987) suggests that a human being processes information in much the same way a computer does. That is, a human being has an information processing system that gathers information from the environment and puts that information into symbolic codes that includes words and numbers. This internal information processing system interprets these symbolic codes, holds them in memory, and allows for the retrieval of stored information. Language acquisition occurs when a child experiences and gathers language evidence in the productions of his/her speech and language models and uses that evidence to make fundamental changes within his/her personal information processing system. This system is constantly adjusted to make its functions consistent with the language evidence the child is gathering. According to this view, children are not born with an internally wired system for language, but they are born with a potential for all kinds of connections between symbols and the things and ideas symbols can represent. Based on their experiences, some connections are firmly established because they are continuously repeated. Other possible connections eventually fade away because children do not experience the evidence to activate them.

According to the social interactionist interpretation of speech and language development both biological and environmental factors are important in the language acquisition process although not necessarily equal. One of the most recent formulations of the social interactionist view of early language acquisition is the Child Talk Model proposed by Chapman et al. (1992). The Child Talk Model suggests that children sometimes create and produce utterances that they are exposed to in interactions with adults. Such interactions help to create a language reservoir. A child needs exposure to conversations associated with a variety of interactions to create their language reservoir. Those who support the Child Talk Model argue that units of language production can range from syllables to sentences. The only criterion that must be met for a unit to be considered language is that it must be connected to some meaning. Humans are complex beings who do not live or grow up in vacuums. To a

large extent children are shaped by their environment especially by their parents and other significant caregivers combined with the power of genetic talent (Hulit & Howard, 2006). The findings of these theoretical views of language have significant implications for research on ID and its remediation.

COMMUNICATION DEVELOPMENT IN TD CHILDREN

Research shows that communicative intent appears before speech development. The infant expresses interactional intentions initially by combining gaze, gesture, and vocal behaviors. Gradually these communicative forms of behavior become word like utterances as the infant acquires the speech forms of his linguistic environment. Bates (1976) suggested that semantics and syntax are derived from pragmatics. Pragmatics involve the use of language within context. The infant learns to use various forms of behavior to carry out a communicative function. The study of language components-phonology, syntax, semantics and pragmatics is important in explaining profile of language in TD children and CWID. However, the task is very expansive for one study. Keeping the focus of this study, i.e., development of syntax in Malayalam speaking children is important to understand the typical development of syntax and applications to our understanding of CWID.

Syntax refers to the study of the principles and process by which sentences are constructed in a particular language. The syntax also refers to the grammatical structure of the language. It deals with word order, inflections, and the relationship between words. Syntax describes the rule that speakers use in forming and in understanding sentences. Syntactic rules specify which strings of words are acceptable and which are not. Without syntactic organization language would be an incoherent jumble of words.

Traditional syntactic characterizations in TD toddlers

Accomplishing two-word combinations is a major milestone in a toddler's cognitive, motor and social development. Toddler’s two-word combinations become prevalent by 24 months of age and have been described by various syntactic formulations focusing on the word order. Brown and Frazer (1963) noted that toddler’s utterances were primarily composed of content words (nouns, verbs,

adjectives etc.) much like adult telegrams while primarily omitting function words (articles, conjunctions). Utterances such as ‘daddy read’ or ‘mummy sit’ are very common.

Toddler’s two-word utterances have also been described as representing a linear syntactic relationship (Brown, 1973; Bloom & Lahey, 1978). In this characterization, it was noted that overall meanings are carried by simple linear combinations of a function word (e.g., more, all gone, there) with a second content word. Brown (1973) described the pattern as a formula f (x), where ‘f’ represents a fixed value (the function word) and (x) represents any other word. The function word (e.g., more) is fixed, indicating that it carries the same meaning as it is combined with other words.

As toddlers progress toward expressing themselves more completely, their word order in a variety of contexts becomes more consistent. Bloom and Lahey (1978) called these word order semantic-syntactic rules emphasizing that meaning precedes and influences form. The meanings expressed by these word orders have been found to reflect a toddler's changing interests, abilities, and knowledge.

Toddlers learn 50 words approximately by 18 months and will attempt to combine them in grammatical order. These are called transitional utterances. This signifies that the toddler recognizes ideas while combining words together. This will be more prevalent by 24 months.

Development of syntax in TD preschoolers

Grammatical development begins with the appearance of two-word utterances, typically as toddlers. Researchers have investigated grammatical structures that are reflective of the language learning process. Brown’s research (1973) focused on 14 grammatical morphemes that illustrated the emergence, gradual approximation, and mastery that characterizes much of language learning in preschoolers. Brown’s stages with boundaries defined by mean length of utterance (MLU) depict the evolution of language that occurs from words and phrases in stage I, through the fine tuning introduced by grammatical morphemes in stage II, to the development of major sentence types in stage III, and the maturation found in complex sentences in stage IV, and compound sentences in stage V. Research suggests that even though

preschoolers exhibit similar sequences of language learning there remains individual variation in both the sequences and rate of learning.

Development of syntax during school years

The aspects of grammar to be mastered during the school years are not categorically separate from the achievements of the preschool years. Beyond the preschool years, vocabulary represents a major area of development throughout the school years. Students become increasingly aware that word meanings are flexible in that they may apply to different contexts and carry different meanings.

Research interest in child language from the mid 1960 through the early 1970's was directed to studying the syntactic development of young children and this continues to be an active research area. The child surges from two-word telegraphic utterances to the complex sentences in a little more than a year and a half. By the time the child is ready to enter kindergarten he will acquire almost all aspects of syntax. Studies have shown that the critical period might end as early as 7 years of age.

Brown et al. (1970) suggested that the most active period of learning syntax is from 18 months to 4 years and generally is completed by the age of 5 to 7 years. There are different levels of linguistic development occurring in this period. In fact, Windsor (1994) suggested that children start developing knowledge about grammatical structure that is comparable to that of an adult around 11 to 13 years.

Nippold et al. (2005) studied the conversational versus expository discourse in children and adults (age 7 to 49 years) to further analyze the development of syntax. She noted in her research that greater syntax complexity occurred for expository discourse when compared to conversational speech across all age groups suggesting that syntax growth continued throughout childhood and adulthood (age 20 to 29 years) and remained stable in middle age.

Theakston and Rowland (2009) studied the acquisition of auxiliary syntax; particularly how and when English speaking children acquire 2 forms of auxiliary BE (is, are) in declaratives, yes/no and WH questions. The children's level of correct use of two forms (is, are) differed according to auxiliary form and sentence structures and

are changed over development. In another study (2009b) they attempted to trace the development of modal auxiliaries in questions and declaratives to provide a more complete picture of development of the auxiliary system in English speaking children. They showed that children's correct use of auxiliaries differed in complex ways according to auxiliary polarity, sentence structure and these relations over time.

Mariscal and Gallego (2012) examined the relationship between lexical and grammatical development in Spanish children. The (European) Spanish version of the MacArthur-Bates Communicative Development Inventories (S-CDIs) was used and administered to 593 Spanish-speaking children between the ages of 16 and 30 months old to evaluate the relationship among age, vocabulary and grammar. They noted that a predictive relationship between vocabulary and grammar was found to be weaker for children whose scores were below the 10th percentile.

SYNTAX DEVELOPMENT IN CWID

CWID develop syntax in a similar manner as TD children, although development is delayed with respect to their MA.

Fowler (1990) found that there is no difference in the usage of syntax in children with Down syndrome (DS) in the early stages of development compared to MA matched TD children. However, older children with DS showed phonological morphosyntactic deficits with relatively preserved lexical abilities.

Fowler et al. (1994) also suggested that children with DS have conversational skills beyond their expressive language levels even though syntax is the greatest area of deficit, indicating a relative strength in their social communication. Chapman et al. (1998) suggested that when expressive language was measured by mean length of utterance and number of words in conversational and narrative samples, children with DS showed greater impairment in expressive language than in non-verbal cognition.

Grela (2002) analyzed the language transcripts of seven MA matched TD children and children with DS and with comparable MLU levels so they could examine several measures of lexical diversity (percentage of utterances containing lexical verbs, number of verb tokens produced, a mean number of verbs per utterance, number of verb types used, and number of mental state verbs used). Grela's results

suggested that the children with DS produced lexical verbs as frequently as TD children. Interestingly, a larger variety of lexical verbs were seen in children with DS compared to their TD counterparts. The results of the study supported other previous findings that children with DS show a relative strength in expressive vocabulary when compared to syntactic development.

Price et al. (2008) compared the syntax of boys who have Fragile X Syndrome (FXS) with and without Autism Spectrum Disorder (ASD) with that of boys who have DS and TD boys. Conversational language samples were evaluated for utterance length and syntactic complexity and found boys with FXS and DS have distinctive language profiles. Although both groups demonstrated syntactic delays, boys with DS showed greater delay.

Zampini and D'Odorico (2011) compared the lexical and syntactic development of 12 Italian children with DS with that of 12 TD children, considering their spontaneous production. Particular attention was given to the relationships between these linguistic areas and the transition from single-word utterances to multi-word combinations (that is, transitional forms). Results showed children with DS had more difficulties using grammatical sentences correctly even if they combined words. The theoretical relevance of the study lies in the fact that a relationship between lexical and syntactic skills supports the hypothesis of interdependence between these two language domains; the practical relevance of the results lies in the fact that intervening on lexical abilities could have a beneficial effect on syntactic skills.

Sepulveda et al. (2013) studied morphosyntactic skills in DS. An intervention programme was designed and carried out with a total of 20 Spanish-speaking children with DS; half of them composed the experimental group and the other half the control group. The results suggested that the children in the experimental group improved more than the children in the control group in the areas of syntax, morphology and semantics, but not in pragmatics, where both groups improved to the same extent. The study concluded that results which were obtained support the effectiveness of the programme implemented as a clinical and educational tool for intervention in individuals with DS.

Martin et al. (2013) compared vocabulary, syntax, pragmatics within and across groups of boys with FXS with and without ASD (FXS-ASD, FXS-O), boys with DS, and TD boys. Findings suggested that expressive language skills and growth across various domains are more impaired in boys with FXS and DS than would be expected based on non-verbal MA, and that for boys with DS syntax is more impaired than would be expected based on ID, and finally, that autism status affects pragmatic language in boys with FXS.

Bello and Onofrio (2014) studied comprehension and production of nouns and predicates in children with DS and found children with DS have lower performance on lexical comprehension and production. Nouns are understood and produced before predicates and delay in lexical skills emerge in both parental report and in structured tests. In comprehension tasks children with DS produced more gestures, particularly without speech, than TD controls.

Varussa and Rose (2015) examined the writing abilities of individuals with DS and Williams syndrome (WS) and 11 MA matched TD children. Results suggested that the two groups with DS and WS did not differ from TD in writing a list of objects placed in bedroom, in the number of errors in the text composition, in a text copying task and in kind of errors made. However, in a word dictation task, individuals with DS made more errors than individuals with WS and TD children. In a pseudo word dictation task, both individuals with DS and WS showed more errors than TD children. The results also revealed good abilities in individuals with ID in different aspects of writing indicating that the presence of ID does not prevent the achievement of writing skills.

Frizelle et al. (2018) did a study on 33 children with DS, 22 children with cognitive impairment (CI) and 33 TD children who did not differ on raw scores on a test of non-verbal cognitive ability. They used a newly devised animation task to examine how well individuals with DS could understand relative clauses, complement clauses and adverbial clauses compared to other two groups. Test for the Reception of Grammar-2, three measures of memory (forward and backward digit recall, visuo-spatial memory) and a hearing screen was administered on all participants. Results suggested that with the exception of intransitive subject relative clauses, children with DS performed poorly on all other complex sentences. They performed at a

significantly lower level than children with CI and TD children. Also, children with DS have significant proportion of the variance over and above memory skills. The finding of the study suggests that children with DS have a disproportionate difficulty understanding complex sentences compared to two control groups matched on MA.

Koizumi et al. (2019) investigated conditions of syntactic development in native Japanese speaking CWID and suggested that syntactic development in CWID was significantly delayed in comparison to MA matched TD children. But as MA advanced, syntax abilities improved in CWID.

Wimmer, Witecy and Penke (2020) studied the production of Wh questions in an experimental task eliciting WH questions of 23 German speaking children with DS and 15 TD children matched for nonverbal MA. Results indicated that most of the participants with DS showed significant difficulties producing complex syntactic structures like Wh questions compared to the performance of TD children.

To summarize, CWID acquire syntax skills in generally the same pattern and order as their MA matched TD children. However, they have delayed and performance in their usage of syntax skills when compared to TD children. It is now important to understand what is known about syntactic development in Indian children who are following a typically developing language trajectory.

INDIAN LITERATURE ON SYNTAX IN TD CHILDREN

Clinicians and researchers dealing with language disorders in children in Indian settings are challenged by the lack of available developmental data in Indian language acquisition research, the nature of delays and differences in specific groups such as CWID and limited assessment methods to gather the needed data that will facilitate the development of intervention tools. Since the 1990s' efforts have been underway to gather the needed data such as the work of Karanth (1984), Subbarao (1995) and others. The following sections explore research in Indian Literature. Most of the language studies in India have focused on syntax.

Prema (1979) examined the syntax of children between 5 and 6 years of age in Kannada and concluded that the structure of basic sentences resembles the adult form, negative markers were used, all the basic interrogative markers in yes/no and ‘Wh’

questions were found, but most of the noun and verb phrases and conjunctions were absent. Results also revealed the instability of gender and number markers by the children.

Roopa (1980) studied the syntax of Hindi language speaking children for 4 to 5-year-old Hindi speaking children. Results showed that basic sentence structure used by the children are similar to that used by adults and developmentally 5-year-old children were found to use more mature than 4-year-old children.

Vijayalaxmi (1981) tested children between the ages of one to five years with the test of acquisition of syntax (TASK) in Kannada and reported that children use case, tense, gender, plural, number and person markers, as well as post positions, determiners, adverbs and adjectives all of which rose in frequency with an increase in age. Three to five-year-old TD children also showed limited use of plural markers, although comprehension was appropriate. The results also suggested that simple transitive and intransitive sentences are expressed by Kannada speaking TD children between 24 and 30 months.

Sudha (1981) developed a syntax screening test in 56 Tamil speaking TD children between the ages 2 to 5 years The results showed an increase in overall performance across 10 grammatical categories (e.g., negation, tenses, plurals, Wh-questions) as a function of age. Significant differences between the performance of boys and girls on the test were not observed in any groups except in 3.6 years to 4 years. A significant difference in the performance of children on the expression and comprehension items was observed across all groups, with comprehension scores almost always superior to expression scores for most grammatical categories.

Kathyayani (1984) studied the development of morphological categories in Kannada in TD children between 6 to 8 years of age. Results revealed the children used genders, plurals and tenses correctly.

Karanth and Suchitra (1993) suggested that children under the age of 6 years are unable to carry out metalinguistic tasks of grammatical judgment. Between 6 and 8 years of age a language growth spurt occurs as children become increasingly proficient in the grammatical judgment task, reaching adult-like proficiency by 14 years of age.

Rukmini (1994) has developed the *Malayalam Language Test* for children 4 to7 years of age. The test has 2 parts – semantics and syntax. Each part has 11 subsections with 5 items each for expressive and receptive tasks except for semantic discrimination (only reception) and the lexical category (only expression). The test was administered to 90 Malayalam speaking TD children in the age range of 4 to 7 years. There were 30 children in each of the following age groups: 4 to 5 years, 5 to 6 years and 6 to 7 years. The results indicated that their scores increased as age increased. Children performed better on receptive task vs expressive tasks, and on syntactic vs. semantic tasks.

Deepak and Karanth (2005) studied the norms for mean length of utterance (MLU) and the frequency of grammatical structures with an increase in MLU in Konkani speaking children. Two age groups were studied (i.e., 3 to 4 years and 4 to 5 years) with 10 participants in each group. Speech sample was obtained through spontaneous speech, picture description and storytelling tasks for both the age groups. The analysis was done based on MLU in words morphemes and percentage of grammatical structures. Results revealed that the acquisition of grammatical forms was found to be directly proportional to the MLU.

Shastry and Subbarao (2011) studied the acquisition of tense markers in thirty 5 to 8-year-old Kundapura Kannada speaking TD children. The results revealed that the frequency of occurrence of present tense markers was more when compared to other tense markers. There were dialectal variations which were frequently observed in present tense forms where simplifications of CVs were significant followed by vowel shortening, syntactic deviations and semantic deviations. Results confirmed those of Subbarao (1995) who reported that present tense marker usage was strongest for 4 to 6-year-old TD children.

Johnson and Kumaraswamy (2015) evaluated the acquisition of participle construction in TD bilingual children whose native language is Malayalam and also checked whether there was any difference in the ability to perform participle constructions between English and Malayalam languages between 12 and14 years of age. The results indicated better performance in English participle construction compared to present participle construction and active vs. passive verb form. In

Malayalam, there is a significant difference between active and passive participle constructions indicating that children mostly use active participles rather than passive participles. Comparing Malayalam and English, in the same children shows that the children are familiar with present, past, and active participles and less with passive participles.

Arya and Kumaraswamy (2015) studied the acquisition of conjunctions in bilingual (Malayalam-English) speaking TD children in the age range of 4 to 6 years to assess the frequency of occurrence of conjunctions in bilingual children and to compare the acquisition of conjunctions in English and Malayalam. The data was obtained by recording monologue, picture description and conversational samples and analyzed at a syntactic level. The results indicated that in English all children acquired conjunctions such as 'and' & 'but', however conjunctions such as 'until & while' were not acquired by the children. In Malayalam, the conjunctions '/um/' & '/pakṣe/' were acquired by 100% of them; children used conjunctions more in Malayalam than English.

Santana and Kumaraswamy (2015) reported the acquisition of tense markers through language samples obtained via picture description for Malayalam speaking TD children to compare the types and presence of tense markers across the age groups 4 to 5, 5 to 6 and 6 to 7 years. Children in the older group performed well compared to the younger group in all tense markers. In their study it has been found that as the age increased, the ability to use correct tense forms has been improved.

Sreelakshmi and Kumaraswamy (2015) report the acquisition of seven case markers in 50 Malayalam speaking TD children in the age range of 3 to 8 years. Nominative, locative, and acquisitive case marker types were the most developed type in any age groups whereas instrumental, genitive, sociative and dative are least developed in earlier ages compared to other case marker types. Results suggested that these case markers should be consider in intervention only when all other types of case markers have been acquired.

INDIAN LITERATURE ON SYNTAX IN CWID

The field of speech language pathology has made several attempts to study the language disorders seen in the past 2 decades in India. Most of the studies in Indian language have focused on exploring semantics (Athira & Kumaraswamy, 2014; Bailoor et al., 2010; Boban & Kumaraswamy, 2017; Kumaraswamy & Subbarao, 2016), and pragmatics (; Abraham et al., 2019; Anjana & Kumaraswamy, 2015; Jisha & Karanth, 2003) in CWID. Further, studies have shown that more than 80% of CWID show language delays and require professional intervention (Bharat Raj, 1987; Prabhu, 1968; Subbarao & Srinivas, 1989).

Subbarao (1995) studied natural conversations with 20 TD children and 60 CWID matched for MA. Results on syntactic analysis presented a varied picture for both TD and CWID. MA matched CWID performed poorly compared to TD children. Overall, a delay in syntactic development was seen. The tense markers: present and past were used by a large number of children in both groups of children. Future/habitual tense was mainly used only by the TD group. Continuous tense was not used by any child. Except for the second person markers, other PNG (Person Number and Gender) markers were seen frequently in TD groups. Only CWID showed some evidence of second person usage. First person and third person markers predominate in the samples probably due to the nature of data collection which involved spontaneous play and conversation, where the children responded to a clinician's stimuli. CWID did not use predicate forms, conjunctions, comparatives and quotatives, conditional clauses or participle constructions. TD children showed some evidence of using some of these syntactic language elements. Certain difficulties in CWID were less obvious; for example, less frequent use of plural markers other than unmarked plurals. CWID produced several sentences with inappropriate use of grammatical markers, e.g. PNG markers and adjectival nouns and generally used simple sentences. The frequently seen sentence types were interrogatives, declaratives and negations and possessives. Tag questions, imperatives and other sentence types were rarely seen in these subjects. TD children produced much more varied sentences and sentence structures.

George and Karanth (1998) conducted a study on MLU and syntactic complexity in CWID (4-6 years MA). The study focused on morphemes,

grammatical categories, and their arrangement in their utterances. Results suggested that speech language deficits are present in CWID. Though all the grammatical categories are acquired, they are not used to their maximum extent, sometimes even correct usage is noted indicating that all the grammatical categories are not fully mastered. Notably, although CWID are able to convey their ideas, their verbal construction lacks the complexity of TD children.

Ranjan and Subbarao (2006) examined the syntactic skills in Hindi speaking CWID with a MA of 3 to 7 years. The results revealed that in TD children, regular plural markers /e: / were the most frequently used forms. Other plural markers /iyan: / were used by a few subjects (33%). The older age group (i.e.,5 to 7 years) performed slightly better than younger group in using regular plural forms. There was no difference between other plural forms /iyan: / in both the older group 2 and younger age group I. In CWID group I, 3 to 5 year-old children used regular plural forms more than other plural forms. In the group of CWID, 2 children (i.e.,5 to 7 years) showed an increase in the percentage of all plural forms used, with more than 75% of the children using regular plurals.

Radhika and Kumaraswamy (2010) reported a comparative study of the development of plural markers in Malayalam speaking TD children (4 to 6 years) and CWID (4 to 6 years MA) by using pictures as stimuli. Results suggested that TD children and CWID used all 4 plural markers although the frequency of occurrence was less in CWID compared to TD children.

Nitha and Subbarao (2010) did a comparative study of development of present tense in markers in Malayalam speaking TD children (4 to 6 years) and CWID (4 to 6 years MA) by using picture naming description as the stimulus. The performance of CWID was less in all 3 tense markers: present perfect, present continuous and present progressive than the TD children. Present tense marker usage in CWID was poor compared to TD children.

Mohan and Kumaraswamy (2015) reported the acquisition of case markers in Malayalam speaking children with DS with a MA between 3 and 8 years of age using picture stimuli. The participants belonged to different age ranges matched by MA between 3 to 8 years and were assigned to 5 groups according to their MA as 3 to 4

years, 4 to 5 years, 5 to 6 years, 6 to 7 years and 7 to 8 years. The results showed that there is a general increase in acquisition as well as frequency of usage of some type of case markers with an increase in the MA of the children.

Priyanka and Kumaraswamy (2018) conducted a study on the acquisition of PNG markers in children with DS with a MA of 4 to 6 and 6 to 8 years. Results suggested that as age increases the ability to use PNG markers improves; thus their study is in accordance with Kaur et al. (2017), revealing that as age increases the acquisition of PNG markers also increases.

Gupta et al. (2019) reported the acquisition of participle construction in Malayalam speaking CWID with an MA of 4 to 5 and 5 to 6 years using picture stimuli. Results revealed that there is an increase in usage of participle construction with an increase in the MA of Malayalam speaking CWID. Gupta et al. (2019) also examined the acquisition of morphophonemic structures in Malayalam speaking CWID with an MA 4 to 5 years and 5 to 6 years by comparing them with TD children in the same age range. Results revealed that vowel + vowel combinations are the morphophonemic structures that are primarily acquired in both groups. Consonant + vowel combination and consonant + consonant combination were the least developed structures in TD children in the age range of 4 to 6 years and are likely to develop beyond 6 years. The result of the study supports the findings of Subbarao (1995) as he found that acquisition of morphophonemic structures advances with age in TD children.

Kaur (2019) obtained extensive language data in Hindi speaking CWID by comparing MA matched TD children in the age range of 4 to 6 years. An overall significant delay was noted among CWID. The syntactic analysis showed that apart from a delay, there were minor but different patterns noted among CWID for case markers. Among morphophonemic structures, as age increased the performance of CWID also improved. In comparison with TD children, the scores of CWID were significantly lower. A significant delay was also noted for plural markers for CWID, like /en/ and /ya/ but minimal for markers like /e/ and suffixes. The tense markers also showed a delayed pattern with present tense being the most common among both the groups. The past tense and future tense were minimally used by TD children and were

negligibly used by CWID. The PNG markers showed a delay as well. First person markers were used frequently by both groups. The wishful marker was present among TD children but was absent in CWID. Case markers also showed a minor difference for locative and instrumental markers which were more frequently used by CWID compared to TD children. The other markers showed a general delay in development in CWID relative to TD children. A general delayed pattern was seen for intransitive verb forms, while transitive verb forms were used equally by both groups. Causatives were completely absent in CWID and less frequently used by TD children. CWID used only simple sentences. Conjunctions, comparatives and quotatives showed a mixed pattern, in which some features were significantly delayed and others developed in a different manner in CWID when compared to TD children

Kumaraswamy (2021) examined language profile of Kannada speaking children with ID (MA 4 to 6 years) by analyzing all levels of language functioning namely phonological, morphological, syntactic, semantic and pragmatics. His study was an extension of previous study (Subbarao, 1995) in language profiling of Kannada speaking CWID and summarized the findings on syntax as: Morphophonemic structure usage was observed to be similar in both TD and CWID groups. Regular plural marker /-galu/ was the most used plural marker by CWID group followed irregular plural and neutral plurals. Deviant use of /-galu/ was noted in some children. Tense markers were not used frequently by CWID group, but were comparable with TD groups. The present tense marker/-tt/ was most observed. Few instances of past and future habitual tense markers were seen. CWID used a few PNG markers. I person singular and plural, third person singular plural markers were frequently observed. However, a second person singular, neuter singular markers were not found I the samples. The results are in agreement with the study by Subbarao (1995) in which a similar trend was noticed. A slight variation was that by 5-6 years, neuter plural markers were used. Some variations could be due to the conversational nature of data collection i.e., conversation where children initiated few conversational cycles. CWID showed less usage of all case markers. Locative and instrumental case markers were seen in about half of the children. It appears that case markers appear to be acquired in the later stage of developmental process. Transitive and intransitive verb forms were significantly less seen in CWID children with causative /-isu/ being

seen in about 30% of the children. Other verb forms were almost absent. Verb forms were found to be difficult for CWID group. Possessives and negation sentences were observed in more than half of the children. Variety of sentences used by CWID are declarative, possessive, interrogative yes/ no and negations. Difficult sentence types were reduplicated 'Wh' interrogative (-yaar/yaaru), tag questions (-alva) and quotatives/-anta). The sentence patterns shown in this study generally agree with Subbarao (1995). One variation appears to be reduplicated 'Wh' interrogative utterances which were not frequently found in the study. A reason for changes could be that language development patterns change with time. Sentences tended to be simple. CWID produced significantly smaller number of sentences and had shorter mean length of sentences as compared to TD children. Conjunctions were used by CWID group but performed poorly in the usage of comparatives and quotatives as compared to that of TD children. In Subbarao (1995) study 5 to 6-year-old TD children showed better usage of conjunction. Kumaraswamy's study differs in the extend with which conjunction, comparative and quotative words were used. Such differences indicate probably the dynamic nature of language development. It is possible that language development has accelerated in the recent years as exposure to Kannada has increased. CWID group used none of the conditional clauses, as can be expected. It was noted that the conditional clause topic/focus is the only structure (16%) observed in CWID. Subbarao (1995) reported that none of the conditional clauses were found in CWID. The study almost agrees with Subbarao (1995), and differs only in some extend. One of the reasons could be that topics of conversation during the data collection have been different between the studies. Affirmative participle construction was used by 50% of CWID group. Other types were not used by children in either groups. In these entire participle construction aspects CWID group significantly lacks behind in the development compared to TD group. Over all, a delay in development of syntax was clearly seen.

NEED FOR THE STUDY

The review of literature observed that since 1990s several attempts have been made to analyze the Language of TD children and children with delayed/ disordered language. The research has focused primarily on syntax and to some extend on pragmatics. In almost all the studies, the language of the TD children is used for creating a comparable data base to that of data obtained from disordered groups. Of all the disordered populations, CWID have been focused as they demand attention to the researchers. Dravidian languages, particularly Kannada has received major attention. Another major language Malayalam, is a language spoken in south India predominantly in the Kerala state. It is one of the 22 scheduled languages of India and was designated a Classical Language in India in 2013. The Union Cabinet granted the coveted recognition to the Language, spoken by 33.3 million Malayalees all over the world. Malayalam now joins Tamil, Kannada and Telugu, all members of the Dravidian linguistic family as the fourth 'classical' language of South India. Malayalam has official language status in the state of Kerala and in the Union territories of Lakshadweep and Puducheri.

Several studies have attempted to assess the expression of syntactic skills in child language disorders like, hearing impairment (D'Souza & Karanth, 1999; Karanth, 1984; Kathyayani, 1984; Usha, 1986; Vijayalaxmi, 1981) ; autism (Jahan, 2010; Shetty, 2016), learning disability (Mridula & Karanth ,2000; Sreelakshmi & Karanth, 2003); specific language impairment (Kuppuraj & Subbarao, 2015) and ID (George & Karanth, 1998; Gupta et al., 2019 ; Jose et al., 2019; Mohan & Kumaraswamy 2015; Nitha & Subbarao, 2010; Radhika & Kumaraswamy, 2010; Ranjan & Subbarao, 2006; Subbarao, 1995). One noted account of research is the development of Linguistic Profile Test (Karanth, 1985) which is applicable for older age (6 years and above) groups. However, no standardized language test is available below 6 years for language analysis. Hence the present study has focused on transcription and analysis method by Subbarao (1995). Among the few studies that have attempted to investigate certain specific syntactic aspects in CWID in Malayalam, published and practiced literature indicates that syntactic performance data in Malayalam is inadequate for clinical and research purposes, for use with

CWID. The present study tries to fill this gap in research. The present study emphasizes comparing the syntactic performance of CWID with Malayalam speaking TD children enabling the speech language pathologist (SLP) for a focused to engage in accurate language assessment, goal setting for intervention and monitoring therapy progress.

CHAPTER 3
METHOD

Some of the important points that are to be considered in a language assessment procedure have emerged in the previous section. Lack of standard tests in Malayalam for language data collection is a reality at present. Collecting naturalistic and conversational data is the goal of the present study. Establishing a grammatical analysis or a general linguistic analysis that is unambiguous and comprehensive is time consuming but necessary work if we want to create linguistic profiles for CWID. The development of assessments must be based on a descriptive analysis of a particular language in which the study is likely to take place. Obtaining a profile of linguistic ability based upon naturalistic conversational samples becomes the objective in meaningful assessment methodology (Crystal et al., 1976 and 1989). It has been previously demonstrated that the LARSP procedure detailed by Crystal et al (1976 and 1989) is helpful in collecting, transcribing and analyzing syntactic data in Kannada language (Kumaraswamy, 2021; Subbarao, 1995) and similarly (Kaur, 2019) used the procedure in analyzing syntax of Hindi speaking children with ID. The methodology of the present study takes into consideration all these points of view.

The present study aims to obtain large scale language data of Malayalam speaking TD children and CWID. The methodology focused primarily on obtaining spontaneous language samples in 4 to 6 year-old children following the previous research of Subbarao (1995) and using an adapted form of LARSP.

AIMS OF THE PRESENT STUDY

This study aims to obtain descriptive language data in Malayalam speaking with CWID in the MA ranges of 4 - 5 and 5 - 6 years. Further similar data will be collected in 4 - 5 and 5 - 6-year-old (chronological age) TD children with the objectives of:

1. Analyzing their expression data at the syntactic level as compared to MA matched TD children

2. Comparing two groups CWID with two different MA ranges of 4 - 5 years and 5 - 6 years for determining age related changes.

RESEARCH DESIGN

The current study used a standard group comparison design that is an extension of ex post facto and normative research. During the study, no manipulation of any independent variable was attempted therefore no causal relationship can be established. The control group consisted of MA matched TD children and a clinical group included CWID.

PARTICIPANTS IN THE STUDY WITH INCLUSIVE AND EXCLUSIVE CRITERIA

Participants included 20 TD children and 60 CWID.

1. TD children

Establishing syntax profiling of TD children was needed to compare with the CWID population in this study. Currently, well established language description data in Malayalam speaking TD children is not available. Moreover, establishment of norms based on spontaneous/free conversational samples is rare. Hence, a preliminary performance description of TD children in the age range of 4 to 6 years was considered essential.

Twenty TD school going children in the age range of 4-6 years were selected and divided into two subgroups of 4-5 years and 5-6 years. This division was considered appropriate because of the MA data available of CWID participants. The MA data was classifiable into 4 - 5 and 5- 6 age ranges. Group I with 4-5 years and Group II 5-6 years' age range would allow later comparison of performances. This age group was selected because, by 4 years one can expect reasonable language development that can be compared to adult language patterns. Moreover, the MA range of 4 -6 years is the major special school going population requiring language therapy services.

All twenty children were attending a Malayalam medium school in Thiruvananthapuram city in Kerala state. Teachers randomly selected children to participate. All selected children had no history of reading and / or writing difficulties, academic failures, history/ complaint of any speech and / or language disorder, hearing impairment or cognitive deficits. A total of 4 boys and 16 girls participated. Children belonged to middle socioeconomic (as per the school records) households .

Table 3.1 shows data on the age and gender distribution of TD children in the age range of 4-6 years

Table 3.1

Age distribution of TD children (Group I: 4-5 years, Group II: 5-6 years)

SL. No	**Age group**	**Name of the children**	**Age in Years & months/ Gender**	**Mean age(group)**
	4-5 years			
1		AR	4.10/M	4.47
2		GN	4.4/F	
3		AS	4.5/F	
4		SU	4.5/M	
5		SR	4.8/F	
6		SS	4.3/F	
7		VD	4.7/F	
8		SJ	4.9/M	
9		DV	4.4/F	
10		SR	4.11/F	
	5-6 years			
1		AD	5.3/F	5.42
2		AT	5.9/F	
3		GS	5.5/F	
4		RE	5.11/F	
5		AN	5.2/F	
6		MN	5.10/F	
7		AN	5.4/F	
8		AR	5.9/F	
9		AS	5.5/F	
10		JS	5.3/M	

2. CWID

Sixty children were selected from 3 different special schools located in Thiruvananthapuram, Eranakulam and Pathanamthitta districts. Only those children for whom psychometric evaluation data was available were selected. All the children were tested within the preceding year by a trained psychologist and MA estimates

were available in school records. The common tests used for assessment of MA were Malin's Intelligence Scale for Indian Children; 5-15 years (Malin, 1969), Vineland Social Maturity Scale (Doll, 1953) Developmental Screening Test (Bharathraj, 1983) and Seguin Form Board (Seguin, 1856). A brief description of the psychological tests is summarized in Appendix.

Based on MA estimates, 30 children each were selected with 4-5 (Group I) and 5-6 (Group II) MA. Their CA were from 8-14 years. It may be mentioned here that these children were considered as mild- moderate groups of ID as per school records. All the children had no additional physical and sensory handicaps. All were attending special schools for at least 4 years. Consent was obtained from parents and the school authorities before data collection. Parents were contacted when needed to obtain case history information and to supplement case records at school. All the children used Malayalam as their major communication medium. A few English words and code mixing were common in these children. All the children selected for the study had no further handicap or illness and were able to participate in play and conversation with others.Standardized language tests were not yet available to assess the language age in children in addition to MA. Gender comparison, percentage and severity of the deficits was excluded . Group I (4-5 years MA) included boys and girls. Group II (5-6 years MA) included boys and girls. Tables 3.2 and 3.3 give the age/gender and MA details of the children.

Table 3.2

Age distribution of children with intellectual disability (CWID Group -I, MA 4-5 years)

SL. No	Name of the children	Age in years/Gender	MA in years	Mean age (group)
1	KI	8/M	4	4.27
2	PO	10/F	4	
3	IR	14/M	4	
4	GI	13/M	4.5	
5	IM	9/M	4.5	
6	SA	9/F	4.5	
7	DI	12/M	4	
8	AL	10/M	4	
9	KC	10/M	4.5	
10	BA	14/M	4	
11	GO	13/F	4	
12	ME	10/F	4.5	
13	AN	8/F	4	
14	RA	13/F	4	
15	AY	9/F	4.5	
16	RY	14/F	4	
17	BA	11/F	4.5	
18	NA	8/F	4	
19	MA	11/F	4.5	
20	SO	10/M	4	
21	JA	12/F	4.5	
22	SA	9/F	4	
23	AT	13/M	4.5	
24	MN	13/M	4.11	
25	AR	10/M	4	
26	SA	9/M	4.5	
27	SU	11/F	4.5	
28	AJ	8/M	4	
29	SR	13/F	4.5	
30	GA	14/F	4.5	

Table 3.3

Age distribution of CWID Group-II, MA 5-6 years

SL. No	Name of the children	Age/Gender	MA in years	Mean age (group)
1	AN	14/F	6	5.317
2	PA	13/M	5.5	
3	SR	10/F	5	
4	JA	10/M	5.2	
5	AN	12/F	5.10	
6	AL	10/F	5.2	
7	AK	8/M	5	
8	SY	9/M	5	
9	SH	13/F	6	
10	AB	13/M	5.5	
11	LA	10/F	5.5	
12	VI	10/M	5	
13	BI	10/M	5	
14	DE	11/M	5.4	
15	MO	12/M	5.2	
16	DP	14/F	5.11	
17	JO	14/M	6	
18	AD	8/M	6	
19	MR	9/F	5	
20	LI	10/F	5.3	
21	AK	10/F	5	
22	IS	12/M	5	
23	JI	11/M	5.5	
24	SH	9/M	5	
25	HA	10/M	5	
26	AI	12/F	6	
27	NI	12/M	6	
28	HA	14/M	5	
29	BI	9/M	5	
30	MU	13/M	5	

THE METHOD USED FOR ANALYSIS

The study envisaged obtaining an audio and videotaped conversational sample with CWID and MA matched TD children and subjecting the language data to analysis. All the children used Malayalam language during their conversational interactions. The focus of this study was an analysis of their syntax. The general guidelines provided by the LARSP (Crystal et al., 1976 and 1989) was used for transcription of the sample and analysis of the response patterns. Modifications and

adaptations of these guidelines followed those of Subbarao (1995) who studied Kannada speaking children.

The LARSP has been described in detail by Crystal et al. (1976 and 1989). It was developed as a single procedure integrating the clinical operations of screening, assessment, and remediation in the area of grammar. It is based on a description of English grammar. The salient features of the syntactic description include identification of sentences and analyzing them at clause, phrase, and word levels. These features are indicated in a developmental profile, based on studies of syntax acquisition in children predominantly under the age of 5 years. The LARSP procedure involves seven stages including sampling transcription, grammatical analysis, structure count, pattern evaluation, statement of remedial goals, and statement of remedial procedures. A free play interaction of about 30 minutes was audio and video taped in a quiet environment and transcribed as per the LARSP guidelines. The grammatical (syntax) analysis involved about 10 scans during which a syntactic structure count is made. Certain quantitative measures are also obtained. The data obtained provides important information for assessment and intervention.

The original guidelines of the sampling procedure and transcription of LARSP have been generally retained and used in the present study. The method of analyzing response sentences of the subject/pupil (P), to the stimuli sentences of the examiner/therapist (T) and calculation of quantitative measures has been adapted.

The description of Malayalam spoken syntactic structures were obtained from two sources namely,

1. The basic categories and structures of Malayalam as defined and described in Grammar of Malayalam (Nair, 2012) and
2. Malayalam -Descriptive Grammars (Asher & Kumari, 1997).

This grammar of Malayalam is a description of the speech of educated people of the Thiruvananthapuram area of Kerala and draws together information about the language from above mentioned sources. The categories of syntactic scans were organized based on the previous efforts using similar methodology in Kannada

(Subbarao, 1995). The examples of syntactic structures are explained along with the explanation of scans under the section on analysis.

DATA COLLECTION AND ANALYSIS

Children interacted during play for about 25 to 30 minutes. Only one child was present at a time with the therapist. Initial 20 minutes consisted of spontaneous speech elicitation or free conversation. The final 10 minutes were utilized for obtaining elicited responses for prompted situations, with topics not related to the immediate surroundings. Table 3.4 gives the list of toys and topics. As far as possible spontaneous conversation was encouraged guiding questions were used only with reluctant children. All interactions occurred using the same stimulus material. The entire session was audio and video recorded using a Hewlett-Packard (HP) tablet, model - 7 voice tab. The recording environment was a quiet well illuminated corner room in a school building. Additional notes regarding the recording situations and activities were taken.

Table 3.4

Material used for sample collection

Toys & play materials	**Common objects**	**Topic of conversation**	**List of pictures**
Utensils & cooking set	Paper	Friends & favorite game	Busy park
Toy auto, aeroplane	Alarm clock	Family members	Road traffic
Ball & doll	Mirror	Daily routine & School	Picnic
Colouring books	Pencil & pens	Festivals	
Animals & birds jigsaw puzzles	Mobile phone	Favorite movie	

The method of transcription closely followed the guidelines of the LARSP procedure. Each of the utterances of the Tester (T) and Pupil/subject (P) were transcribed verbatim within a few hours of recording on the same day. Each new sentence was written down on a separate line and marked as either a T's or P's utterance. The clues provided by notes taken during the recording session were also written down during transcription. Particular attention was paid to the prosodic information such as a tone boundary of a sentence, pausing (10 seconds or more to make sure that no response was forthcoming) between words and sentences, and the rise and fall of intonation in a given word/sentence that were noted during transcription. Overall guidelines provided by LARSP were followed. The transcribed data was checked twice by the investigator for accuracy. A five-minute language sample of three children was transcribed and analyzed twice within a gap of two weeks to assess the test- retest reliability of transcription and analysis.

The sample thus obtained was subjected to a total of 10 scans, which included i. morphophonemic-structures, ii. plurals, iii. Tenses, iv. PNGmarkers, v. case markers, vi. transitives, intransitives and causatives, vii. sentence types, viii conjunctions comparatives and Quotatives, ix. Conditional clauses and x. participle constructions) to cover the syntactic aspects and each of the aspects was marked on a worksheet for each subject separately. Only the presence or absence of a unit of analysis was noted and marked '+' or '-' respectively. Thus, marked data was transferred onto a smaller profile for analysis purposes. The following scans were made on each of the transcripts.

QUANTITATIVE ANALYSIS FROM SCAN 1 TO 3

Scan 1: Unanalyzed sentences

This scan determines the range of sentences which cannot be analyzed, or which raise problems which have to be deferred until later in the analysis. Unanalyzed sentences fall in three categories: (a) the sentence or utterance is wholly or partly unintelligible (b) symbolic noise such as imitations of vehicle noises and vegetative noises and (c) deviant sentences which are both structurally inadmissible in the adult grammar and not part of the expected grammatical development of TD children. The deviant form may be analyzed in terms of morpheme order (e.g. kicked man dog),

morpheme addition (e.g. the cat a kicked), morpheme omission (e.g. the is in the garden) or morpheme substitution (e.g. he be speakly louding). They may be totally uninterpretable (e.g. chase there my is washing man) or an interpretation may seem not to be too far away (e.g. / saw was in a garden my daddy gone).

Incomplete sentences are generally unfinished sentences marked by incomplete prosody. Ambiguous sentences refer to sentences which could receive two or more possible syntactic interpretations and it is unclear from all available situational information which is correct. Incomplete and ambiguous sentences are included under the problem category

Scan 1 tries to ensure that subsequent scans will be as unproblematic as possible so that a rapid and continuous analysis can be made. The Scan-1 sentences are not analyzed further.

Scan 2: Type of response analysis

This establishes the proportion of spontaneous to response sentences in the sample and provides an analysis of the type of response. Generally, a response is considered as the sentence immediately following a sentence 'T' has produced. Responses are classified according to the type of stimulus sentences such as question stimuli. The total number of questions vs. others is included. All types of questions are counted under 'questions' and all other types of sentences are included under 'others'. Filler sounds and self-commentary sentences used by 'T' are ignored unless T has allowed sufficient time for P to respond.

The response patterns are classified under 'normal response type' and 'abnormal'. Normal responses are 3 types: (i) a full major sentence (ii) an elliptical major sentence: where it is possible to recall an exact number of words omitted, by referring to the previous sentence. If one word of the sentence is remaining it is elliptical 1 and similarly elliptical 2 and 3 sentences are noted (iii) a minor sentence: usually / uhm, illa/ (no), /mhm, untu/ (yes). Abnormal response types are two types, one zero response, where a response is expected but not provided. The other is structural deviance, where syntactically a response is not a possible match for the syntax of a stimulus sentence.

A broad category of repetitions is classified in which any of P's sentences, where there is cause to think that P is doing no more than repeating all or part of T's sentence are included. Generally, echolalic responses and elicited imitations are included. Wherever there is uncertainty in classification in any of the above categories, sentences are placed under the 'problem' category. The total number of all responses to questions or others as given under the heading 'total' is obtained. This total can be compared to the number of stimuli.

Spontaneous sentences are distinguished from responses. Any extra sentence other than the response sentence produced immediately following a stimulus is considered as a spontaneous sentence. It is seen if they are elliptical 1 type or other sentence types.

Scan 3: Minor sentence analysis

Here analysis of minor sentences and quantitative information is considered. A minor sentence is checked to see if it is a social type: yes, no, which, etc., or if it is a stereotype, such as numbers and rhymes recited. The quantitative information includes (a) the total number of sentences (including repetitions, but ignoring the Unanalyzed/problematic utterances in scan 1) (b) the mean number of sentences in each of the P's interchanges with T is obtained by dividing the total number of P's responses by the total number of T's stimuli (c) the mean sentence length measured in terms of 'words', a word is an item surrounded by spaces. Here scan 1 sentences are ignored. The score is obtained by the total number of words divided by the total number of P's sentences.

QUALITATIVE ANALYSIS OF SYNTACTIC STRUCTURES FROM SCAN 4 TO 13 (10 SCANS)

Scan 4: Morphophonemic structures

Morphophonemic structures or Sandhi denotes the changes which occur in sounds when two words or separate morphemes come together resulting in a new word. Sounds are substituted, deleted or inserted or rearranged. In Malayalam language, most noticeable morphophonemic structures are:

i. Combination of vowel+vowel sandhi
ii. Combination of vowel + consonant sandhi
iii. Combination of consonant +consonant sandhi

i. Combination of vowel + vowel sandhi

a. /- a+a and a+aa/

/-a+a/

Example: /itu vaḷayaḷḷa/ ‘This is not a bangle’

/-a+aa/

Example: / itu vaḷayyaanu/ ‘This is bangle’

b. /-i+a and i+aa/

/-i+a/

Example: /kiḷiyalla/ ‘This is not a bird’

/-i+aa/

Example: /kiḷiyaaṇu/ ‘This is a bird’

/-i+i and i+u/

/-i+i/

Example: /eliyilla / ‘rat is not here’

/-i+u/

Example: /eliyuntu/ ‘rat is here’

c. /- a+i/

Example: / valiyil aana iraŋi / ‘an elephant has come to the path’

d. /-a+e/

Example: /kuṭṭi vala eṭukkunnu ‘the child is picking the bangle’

e. /- a+u/

Example: /:kaaḳḳayuntu/ ‘there is a crow’

f. /- i+e/

Example: / peenayeṭuḳḳunnu/ ‘picking the pen’

ii. Combination of vowel + consonant sandhi

Example: /paṭi+keṭṭu/ = /paṭikeṭṭu/ ‘staircase’

iii. Combination of consonant + consonant sandhi

Example: /kaal+paaṭu/= kaalppaṭŭ ‘foot print’

Scan 5: Plurals

Malayalam nouns show singular- plural distinction. /–kaḷ/ and /–maaṛ/ are the plural suffixes of Malayalam. The distribution of two suffixes is as follows

Inanimate count nouns, both concrete and abstract, use the plural suffix –kal

Example: / kuṭa/ -/kuṭakaḷ/ ‘umbrella’- ‘umbrellas’

Animate human nouns and animate non-human sounds take the suffix /–maar/ when they have gender suffixes (or when the noun is Gender without suffix as in /amma/ ‘Mother’), and –kaḷ otherwise.

Example: /amma/ - /ammamaaṛ ‘mother’ - ‘mothers’

The plural suffix /–aṛ/ which is used with a limited number of nouns does not indicate gender

Example: /śiṣyaṛ/ ‘disciples’

The plural suffix is deleted when preceded by numeral adjectives

Examples: /naalu ruupa/ ‘four rupees’

Scan 6: Tenses

Past, present and future tenses are morphologically distinct in Malayalam; but, the same tense form may be used to refer to more than one-time period. The present and future tense forms especially, do not correspond strictly to present and future time.

i. Past tense
ii. Present tense
iii. Future tense

i. Past tense- it denotes the time -passed without any distinction between remote past and recent past.

Example: /ravi eluti/ ‘Ravi wrote’

ii. Present tense is used in the following situations:

With performative verbs to denote oaths declarations announcements etc.

Example: /ñaan satyam ceyyunnu/ ‘I swear’

To denote ongoing actions

Example: / mala peyyunnu / ‘It is raining’

To denote universal time

Example: /suuryan kilakku udikkunnu/ ‘The sun rises in the east’

iii. Future tense it conveys predictions and habitual actions

Predictions

Example: /naale mala peyyum/ ‘It will rain tomorrow’

Habitual actions

Example: /avan raatṛi vayaṛ niṛaccu uṇṇum/ ‘He will eat full at night’

Scan 7: PNG markers

The verb in Malayalam is not marked for number and gender ((Nair, 2012). As the verb does not take number and gender terminations in Malayalam, gender marking of nouns is not a grammatically relevant feature. The suffix / –an /marks masculine gender and the suffix /–i/, feminine gender.

Example: /kaḷḷan/, / kaḷḷi/ ‘Thief’

Variant gender suffixes are seen in a limited set of nouns such as:

Example: / aṉiyatti/ ‘Younger sister’

Person markers of Malayalam are changed as per semantic needs.

Examples of I person are:

I person singular /ñaan/ ‘I’

I person plural /ñaŋŋal/naam/nammaḷ/ ‘we’

Examples of II person are:

II person singular / nii/ ‘You (used for addressees of lower status, lesser in age or who are in close terms)

II person plural /niŋŋal/ ‘You (polite form)

Examples of III person are:

III-person singular male /avan/ivan/ ‘He’

III-person singular female /aval, ivaḷ/ ‘She’

III-person singular neutral /atu/itu/ ‘It’

III-person plural /avaṛ/ivaṛ/ ‘They (polite form)’

III person plural neutral /ava,iva/ ‘It

Scan 8: Case markers (case system)

Malayalam follows the system of marking grammatical relations and semantic roles through a set of case suffixes, a feature common to the Dravidian languages. As roles and relations are conveyed through suffixes, word order changes do not normally alter sentence meaning in Malayalam.

The case system of Malayalam includes 7 cases:

i. Nominative - The nominative noun denotes the subject of the sentence

Example: /ravi eluti/ 'Ravi wrote'

ii. Accusative marks the object of the sentence /-e/

Example: /nivi tattaye piṭiccu/ 'Nivi caught a parrot'

iii. Dative - The dative case noun can stand as either subject or object. In sentences where there is no nominative noun, the dative function as a subject. /-ku, -nu/

Example:

/satiykkŭ peṭṭannu deeṣyam varum/ 'Sati gets angry easily'

iv. Sociative - the Sociative is grammatically similar to accusative but semantically different. Like the accusative, the Sociative also marks the objective. /-oṭu/

Example:

/viṉay citṛayooṭu aa vaaṛtta paraññu/ 'Vinay told that news to Chitra'

v. Instrumental suffix /-aal/ denotes inanimate objects used by the subject to perform an action. (-aal)

Example:

/avaṛ aaṉaye vaṭattaal baṉdhiccu/ 'They tied the elephant with a rope'

vi. Locative case denotes spatial and temporal meaning (-il)

Example:

/kuṭṭikaḷ bassil kayaṟunnu/ ‘The children are boarding the bus’

vii. Genitive case denotes possession /-n̲ṛe, -uṭe/

Example:

/en̲ṛe pen̲a/ ‘My pen’/an̲aghayuṭe maala/ ‘Anagha’s chain’

Scan 9: Transitives, Intransitives and Causatives

Descriptive grammar series of Malayalam describes and distinguishes three types/ kind of verbs namely, transitive, intransitive and causative verbs.

Transitives

Examples:

/ ravi caar vaaŋiccu/ ‘Ravi bought a car’

/aval keekku muṛiccu/ ‘She cut the cake’

/ avan dosa tinnu / ‘He ate dosa’

Intransitives

Examples:

/kutti cirikkun̲n̲u / ‘Child is smiling’

/avan uranni / ‘He slept’

/avar natannu/ ‘They walked’

Causatives

Examples:

i. /-iccu/ causative (past)

/amma kuññine kalippiccŭ/ ‘mother made the child play’

ii. /-unnu/ causative (present)

/amma kuññine kalippikkunnu/ ‘mother makes the child play’

iii. /-kkum/ causative (future)

/amma kuññine kalippikkum/ ‘mother will make the child play’

Scan 10: Sentence types

Sentences in Malayalam are classified into:

i. Interrogative neutral yes-no questions /-oo/

Example: /niŋŋal innu skuuḷil pooyoo/ ‘did you go to school today?’

ii. Question word questions: Who question/ (– entu (what), -eetu (which), - ennu (when),-eviṭe (where)/.

iii. Interrogative tag /-unto, alle , ille/
Example: /itu peena, alle/ ‘This is pen, isn’t it?’

iv. Adjectival use
Examples: /ñaan oru putiya pustakam vaaŋŋiccu/ ‘I bought a new book’

v. Declarative sentences
Example: /atu ravi/ ‘That is ravi/itu palaya pustakamaanu/ ‘This is an old book’

vi. Negation /-illa, alla/
Example: / keeralattil mala aanu / ‘it’s raining in Kerala’
/keeralattil mala alla / ‘it’s not raining in Kerala’

vii. Affirmative sentences
Examples: /saam nannai paaṭum/ ‘Sam sings well’

viii. Quotatives/ reportives /-ennu/

Examples: /maasʹu vannu ennu kuṭṭi paraññu/ (student said that teacher came)

ix. Imperative sentences:

Example: / nii poo/ ‘you go
/nii vaa/ ‘you come
/ niŋŋal varoo/ ‘You (pl.) come
/ini aval pokkooṭṭe/ ‘Let her go now (giving permission)

x. Reduplicated sentences

Example: /mummunnai/ ‘threes
/onnonnai/ ‘one by one’

xi. Possessive sentences

Example: /avaluṭe peena/ ‘her pen’

xii. Reflexive sentences /-tanne/’

Example: /avan avanettanne muṛiveelppiccu/ ‘he injured himself’

Scan 11: Conjunctions, Comparatives and Quotatives

Conjunction used in Malayalam is /–um/

Example: /nivium vinium/ ‘Nivi and Vini’

There are no morphological comparative and superlative forms of adjectives but they do occur within noun phrases. In the case of comparative structure, it is a condition of its occurrence that the object of the comparison must be expressed, since without this there is no comparative structure.

Examples: /itilum nalla pustakam/ ‘A book better than this’

/eeṛṛavum nalla pustakam itaaṇu/ ‘the best book is this’

Reportive speech in Malayalam is usually marked by the Quotative participle / -ennu/

Example: /ravi varaam ennu paraññu/ ‘Ravi said he will come’

Scan 12: Conditional clauses

A number of ways of stating a condition can occur.

i. A commonly used form consists of the suffix /–aal/ added to the past tense stem.

Example: / avaṉ vannaal parayanam/ ‘If he comes, I shall tell him’

ii. Another commonly used form has /– eŋkil/

Example: /nii atŭ ceyyumeŋkil ñaanum varaam/‘If you will do, I will come’

iii. Unfulfilled conditions are commonly expressed with complex verb forms + /-eŋkil/

Example: /maḻa peytirunneŋkil ñaan purathu pookillaayiruṉṉu/ ‘If it had rained, I should not have gone out’

Scan 13: Participle constructions: 2 types

i. Relative participle construction

a. Present participle

Example: /meṣa uḷḷa muṛi/ ‘a room with a table’

b. Negative participle

Example: /meṣayiḷḷatta muṛi/ ‘a room without a table’

ii. Verbal participle construction

Example: /kuṭṭikal varivariyaai pookunnu/ ‘children going in a single file’

/kuṭṭikal kooṭṭamai pookunnu / children going in a group

In Appendix-1, the proforma describes all the structures in each of the scans. This proforma was used to mark the results of analysis.

In summary the analysis included establishing the proportion of spontaneous to response sentences, type of response, quantitative information and syntactic analysis from the transcription obtained as a result of spontaneous and prompted conversation in an informal/natural situation. This is expected to provide a comprehensive description of the language behaviour of the child leading to better remediation planning. This approach also goes beyond a test and eliciting a predetermined set of responses.

Initially the data on 4 to 6-year TD children was analyzed and the presence or absence of each of the structures listed above was marked. A similar procedure was followed for data collection with the CWID. For both the groups, the number of persons responding/showing the presence of a structure was counted and was treated as a raw score. This was used to broadly compare the groups: TD children (4-5 years) and MA matched CWID; TD children (5-6 years) and MA matched CWID in addition to qualitative description. The results and discussions are provided in the next section.

STATISTICAL ANALYSIS

Collected data was analyzed using descriptive (inferential) statistical methods. Descriptive methods such as frequency, percentage (%), mean and standard deviations were used to summarize the data of various parameters. To compare the syntactic aspects within the age groups and between the groups, proportions were used. To compare total number of sentences, mean length of utterance, mean sentence per turn, an independent t-test was used. Level of significance was5%, p value less than 0.05 is considered as significant.

ETHICAL CONSIDERATIONS

The present study was carried out by providing a consent letter to the head of the institutions, teachers, and parents to be signed for giving permission to assess the children. The objectives of the study, method, and the duration to administer the test

were clearly explained. They were also assured that testing was harmless with no financial benefit for the researcher and that confidentiality would be maintained regarding the children's personal details and test results. A written format of the ethical consent is included in Appendix.

CHAPTER 4

RESULTS AND DISCUSSION

CWID constitute a large number among all subgroups of children with language disorders. It is only recently that the language behavior of these children has become an important area of research particularly in the Indian context. Studying the areas of language- phonology, syntax, semantics, and pragmatics has generally supported a delay hypothesis. However, there are reports of differences between MA matched typical and handicapped groups. In fact, it is recognized that the extent of difference in development is underestimated (Kiernan, 1985). The results of the present study also support these views. A detailed description of syntactic skills in CWID is necessary for better assessment and intervention planning. As observed previously limited studies have explored syntactic aspects in Malayalam speaking CWID. The present study is a first large scale data analysis of Malayalam syntax in 20 TD and 60 CWID.

The results of the syntactic analysis on the Malayalam speaking children are presented in this section. Data obtained on TD children are presented, followed by a description of the data for CWID. A comparison between TD and CWID groups will be presented subsequently. Both within and across group comparisons provided details about Malayalam syntax used by children with mental ages of 4 to 6 years. Brief information on Scans 1 to 3, regarding the response types are also presented. This information is mainly needed to interpret the performance of other analyses. In each individual child, the response types do provide a pattern which may be a characteristic of the nature of the disorder. For example, the presence of spontaneous utterances is a characteristic of TD children, but it may not be seen in a language delayed CWID. Since these comparisons are mainly on individual children, they are being discussed, after group comparison.

QUANTITATIVE ANALYSIS

The transcribed language samples were analyzed for the stimulus type and response categories. All the sentences were counted for Therapist (T) and Pupil (P)/child. The total number of sentences produced by ‘P’s was counted including 3

quantitative measures: total number of sentences, mean number of sentences per turn and mean sentence length. The present measures were used for comparing Malayalam speaking CWID and MA matched TD children. The group means and standard deviations were calculated and significant differences between the means was calculated using a 't' test for unmatched pairs.

Table 4.1:

Data on quantitative parameters within group comparison of the TD children and CWID.

Parameters	Group	N	Mean	S.D	T value	P value	Significance
Total number of sentences	TD children Group -I(4-5 years)	10	140.8	8.6	-3.44	0.003	S
	TD children Group -II(5-6 years)	10	157.7	13.0			
	CWID Group -I(4-5 YEARS M.A)	30	103.2	7.4	-26.91	< 0.001	S
	CWID Group -II(5-6 YEARS MA)	30	145.0	4.2			
Mean number of sentences per turn	TD children Group -I(4-5 years)	10	1.1750	0.09419	10.065	0.000	HS
	TD children Group -II(5-6 years)	10	1.2750	0.05543			
	CWID Group -I(4-5 YEARS M.A)	30	0.6627	0.04934	26.913	0.000	HS
	CWID Group -II(5-6 YEARS MA)	30	0.9317	0.02335			
Mean sentence length (M.L.U)	TD children Group -I(4-5 years)	10	2.2050	0.09641	26.993	0.000	HS
	TD children Group -II(5-6 years)	10	2.740	0.13150			
	CWID Group-I(4-5 YEARS M.A)	30	1.3100	0.08408	4.850	0.000	HS
	CWID group -II(5-6 YEARS MA)	30	1.3907	0.15144			

HS- Highly significant, S – significant

Table 4.2:

Data on quantitative parameters across the group comparison of TD children and CWID.

Parameters	Group	N	Mean	S.D	T value	P value	Significance
Total number of sentences	TD children Group-I(4-5 years)	10	140.8	8.6	13.38	< 0.001	S
	CWID Group I(4-5 years M.A)	30	103.2	7.4			
	TD Children Group -II(5-6 YEARS)	10	157.7	13.0	4.77	< 0.001	S
	CWID Group -II(5-6 YEARS MA)	30	145.0	4.2			
Mean number of sentences per turn	TD children Group -I(4-5 years)	10	1.175	0.094	22.300	0.000	HS
	CWID Group –I (4-5 years M.A)	30	0.663	0.049			
	TD Children Group -II (5-6 YEARS)	10	1.275	0.055			
	CWID Group-II(5-6 YEARS MA)	30	0.932	0.023	27.801	0.000	HS
Mean sentence length	TD children (4-5 years)	10	2.205	0.096	28.123	0.000	HS
	CWID (4-5 years M.A)	30	1.310	0.084			
	TD Children Group -II(5-6 YEARS)	10	2.724	0.132	22.127	0.000	HS
	CWID Group-II(5-6 YEARS MA)	30	1.471	0.162			

HS- Highly significant, S - Significant

As can be observed from Table 4.1 TD children Group II (5 - 6 years) showed significant difference in performance when compared to TD children Group I (4-5 years) for the first quantitative measure (total number of sentences). Group II (5 - 6 years) TD children showed highly significant differences in performance when compared to TD children Group I (4-5 years) for the second quantitative measure (Mean number of sentence per turn) and third quantitative measure (Mean sentence length). A comparison of the two MA groups among the CWID shows the difference between the two groups is statistically significant. This indicates that the children in the age group of 5-6 years produced more sentences than Group I (4-5 years) children.

Examination of Table 4.2 reveals significant differences between TD children and CWID groups matched for MA. TD children groups I (4-5 years) and II (5-6 years) produced higher total number of sentences, produced more number of sentences per turn, and Mean sentence length as compared to CWID Group I (4-5 years M.A) and Group II (5-6 years M.A).

The results of the quantitative analyses indicate that TD children in the 4–5-year group differ significantly from the 5-6-year-old group. CWID with higher MA (5-6 years) also performed significantly better than CWID with lower MA (4-5 years). The results in general indicate that a wide range of performance is seen in both TD children and CWID. It also supports the observation that MA (in terms of quantitative analysis) alone does not describe language performance adequately. Hence, individual profiling becomes very important. The measure of sentence length does not appear to be a differentiating variable between TD children and CWID. CWID produced relatively fewer spontaneous utterances than TD children. It is worth noting that the response patterns of the children are essential to interpret the quantitative data. These patterns are explained later in this chapter.

QUALITATIVE ANALYSIS

Scan 4. Morphophonemic structures

TD children

Table 4.3 shows the performance of TD children. Group I (4-5-year-old) showed the presence of morphophonemes involving vowel+vowel combination in almost all children. Structures involving vowel + consonant combinations were seen in less than 20% of the children. Group II (5-6 years old) showed the same pattern but a higher percentage of subjects achieved the morphophonemic structures. Statistically no significant differences were found between the groups. The results generally indicate that vowel+vowel combinations were achieved in children by the age of 4 years. Consonant combinations were yet to be mastered by 6 years.

The results of the present study are supported by previous studies. A similar pattern of results was observed in Kannada speaking 4-6-year-old TD children (Subbarao, 1995). Kaur (2019) also reported that Hindi speaking children by 4 years

of age acquired vowel alteration among other morphophonemic structures. Both studies support the notion that morphophonemes are acquired by the age of 6 years.

Table 4.3

Morphophonemic Structures in TD Children with statistical evidence.

Morphophonemic tructures	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n = 10 %**	**Z Value**	**P**	**Significance**
Vowel + Vowel combination /-a+a & a+aa/	7	70	10	100	1.88	.077	NS
/-i+a & i+aa/	10	100	10	100	-	-	NS
/-i+i & i+u/	10	100	10	100	-	-	NS
/-a+i/	9	90	10	100	1.03	.318	NS
/-a+u/	10	100	10	100	-	-	NS
/-a+e/	10	100	10	100	-	-	NS
/-i+e/	9	90	10	100	1.03	.318	NS
Vowel +Consonant combination	1	10	5	50	1.95	.067	NS
Consonant +Consonant combination	2	20	5	50	1.41	.177	NS

HS- Highly significant, S – Significant, NS-No significance

CWID

Table 4.4 shows that about 50% of Group I (4-5 years MA) CWID used morphophonemic structures involving vowel+vowel combinations. Structures involving consonants were not seen in any child. A similar pattern was observed in Group II (5-6-year MA). It can be inferred that the two groups of CWID do not differ in their performance on morphophonemic acquisition. The only exception appeared to be /a+e/ combination where a statistically significant difference was observed.

The results are generally supported by the findings of previous studies. Gupta et al. (2019) studied the acquisition of morphophonemic structures in Malayalam

speaking CWID and reported that consonant + vowel combination and consonant + consonant combination were the least developed structures in the age range of 4-6 years. These morphophonemic structures are likely to develop after the age of 6 years. Subbarao (1995) has shown that the lower MA (4-5 years) group performed better than the higher MA (5-6 years) group in using fewer morphophonemic structures. Kaur (2019) reported that Hindi speaking CWID, even by 6 years, showed a very limited number of morphophonemic structures. Overall, morphophonemic structures appear to be language specific in their acquisition by CWID.

Table 4.4

Morphophonemic Structures in CWID with statistical evidence.

Morphophonemic structures	**Group I CWID 4-5 years MA**	**n = 30 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Vowel+Vowel combination /-a+a & a+aa/ /-i+a & i+aa/ /-i+i & i+u/ /-a+i/ /-a+e/ /-i+e/	17	56.7	21	70.0	1.07	.288	NS
	14	46.7	21	70.0	1.83	.072	NS
	21	70.0	22	73.3	.29	.776	NS
	16	53.3	18	60.0	.52	.604	NS
	18	60	27	90.0	2.68	.009	HS
	21	70.0	27	90.0	1.94	.058	NS
Vowel +Consonant combination	0	.0	0	.0	-	-	NS
Consonant +Consonant combination	0	.0	0	.0	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

CROSS COMPARISON BETWEEN THE GROUPS

As observed in table 4.5, Group I CWID consistently performed poorly for all structures. Vowel combinations /i+i/ (e.g., /muṛiyalla/ ‘this is not a room’); /i+u/ (e.g., /muriyuntu/ ‘this is a room’); /a+u/ (e.g., /paṭṭiyuntu/ ‘there is a dog’); and /i+e/ (/kuṭayeṭukkunnu/ ‘picking umbrella’) for both TD and CWID showed similar high significant performance. No statistical difference was noted on the vowel combinations namely, /i+a/ (e.g., paṭṭiyaanu/ ‘this is a dog’); /a+i/ (e.g., /poocca

valiyil iranji/ ‘a cat has come to the path’) and /a+a/ (e.g., /talayaanu/ ‘this is a head’), however, CWID performed poorly compared to their TD counter parts and statistically significant difference was noted. Vowel and consonants combinations were not seen in either group. Similar to this study, performance variation was reported in both Kannada (Subbarao, 1995; Kumaraswamy, 2021) and Hindi speaking children (Kaur, 2019).

Table 4.5

Cross comparison of Morphophonemic Structures between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Morphophonemic structures	**Group I TD 4-5 years**	**n = 10 %**	**Group I CWID 4-5 years MA**	**n = 30 %**	**Z Valu**	**P**	**Significance**
Vowel+Vowel combination	7	70.0	17	56.7	.75	0.461	NS
/-a+a & a+aa/	10	100.0	14	46.7	2.98	0.005	HS
/-i+a & i+aa/	10	100.0	21	70.0	1.97	0.056	NS
/-i+i & i+u/	9	90.0	16	53.3	2.07	0.045	Sig
/-a+i/	10	100.0	22	73.3	1.83	0.076	NS
/-a+u/	10	100.0	18	60.0	2.39	0.022	Sig
/-a+e/	9	90.0	21	70.0	1.26	0.214	NS
/-i+e/							
Vowel +Consonant combination	1	10.0	0	.0	1.75	0.087	NS
Consonant +Consonant combination	2	20.0	0	.0	2.51	0.016	Sig

HS- Highly significant, S – Significant, NS-No significance

Table 4.6 shows that both higher MA CWID group and 5-6-year-old TD group perform well on all vowel combination morphophonemic structures. High statistical significance was noted for vowel+vowel combination /-i+a & i+aa/ with about 46.7% for Group II (5-6 years) TD children. Statistical differences were noted in the usage of vowel +vowel combination /-a+i/ and/-a+e/ with about 90-100% of Group II (5-6 years) TD children using it. While 20% of Group II (5-6 years) TD children used consonant+consonant combination 0% of Group II (5-6 years MA) CWID used it.

Hence statistically significant differences were seen. No statistically significant difference was seen except for /a+i/ combination where 60% of higher MA CWID groups showed the presence of the combination as compared to 100% of TD Group II. The vowel+consonant combinations were performed poorly by both the groups. Overall, a varied performance of TD and CWID groups indicates that acquisition of morphophonemic structures is an ongoing process even by 6 years of age.

Table 4.6

Cross comparison of Morphophonemic Structures between participants of Group II TD & MA matched CWID with statistical evidence.

Morphophonemic structures	Group II TD 5-6 years	n = 10 %	Group II CWID 5-6 years	n = 30 %	Z Value	P	Significance
Vowel+Vowel combination /-a+a & a+aa/	10	100.0%	21	70.0%	1.97	0.056	NS
/-i+a & i+aa/	10	100.0%	21	70.0%	1.97	0.056	NS
/-i+i & i+u/	10	100.0%	22	73.3%	1.83	0.076	NS
/-a+i/	10	100.0%	18	60.0%	2.39	0.022	Sig
/-a+u/	10	100.0%	27	90.0%	1.04	0.305	NS
/-a+e/	10	100.0%	27	90.0%	1.04	0.305	NS
/-i+e/	10	100.0%	27	90.0%	1.04	0.305	NS
Vowel+Consonant combination	5	50.0%	0	.0%	4.14	0.000	HS
Consonant+Consonant combination	5	50.0%	0	.0%	4.14	0.000	HS

HS- Highly significant, S – Significant, NS-No significance

Scan 5: Plural forms

TD Children

As can be seeninTable 4.7, TD children used plural /kal/ (e.g., /pookkaḷ/ ‘flowers’) and numerical suffix (e.g., /aaṛu meeśa / ‘six tables’) most frequently. Suffix /mar/ (e.g., /tiiccaṛmaaṛ/ ‘teachers’) was used by 40-60% of the children. No statistical difference was noted for the numeral suffix, suffix/-kal/ and suffix /mar/

between the groups. Suffix /ar/ was not used by any of the children in Group I (4-5 years). Statistical significance was seen for the suffix /-ar/between the groups. It can be inferred that /kal/ is the most frequently used plural marker, with other forms used to a less extent by 4-6-year-old children.

Table 4.7

Plural markers in TD Children with statistical evidence.

Plurals	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n = 10 %**	**Z value**	**P**	**Significance**
Suffix /–kal/	9	90.0%	10	100.0%	1.03	.318	NS
Suffix / –mar/	6	60.0%	8	80.0%	.98	.342	NS
Suffix /–ar/	0	0.0%	5	50.0%	2.58	.019	Sig
Numeral suffix	10	100.0%	10	100.0%	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

Subbarao (1995) reported that 4-6-year-old Kannada speaking TD children used regular /galu/ and unmarked plurals. Kaur (2019) noted that by 4 years, Hindi speaking children used neutral plurals and masculine plurals /el/ forms. Other forms were less acquired by 6 years of age. Results of the present study supports the trends shown in the studies of other Indian languages.

CWID

Table 4.8 shows the performance of children in Group I (MA 4-5 years) and Group II (MA 5-6 years). Both groups show a similar performance. Suffix /kal/ and numerical suffix were used by 70% or above children. Suffix /ar/ was not used by any child in both groups. No statistically significant difference was noted.

Table 4.8

Plural Markers in CWID with statistical evidence.

Plurals	Group I CWID 4-5 years MA	n = 30 %	Group II CWID 5-6 years MA	n = 30 %	Z value	P	Significance
Suffix /–kal/	21	70.0%	27	90.0%	1.94	.058	NS
Suffix/ –mar/	12	40.0%	18	60.0%	1.55	.127	NS
Suffix /–ar/	0	.0%	0	.0%	-	-	NS
Numeral suffix	22	73.3%	26	86.7%	1.29	.202	NS

HS- Highly significant, S – Significant, NS-No significance

The present study's results align well with previous studies in Malayalam speaking children. Radhika and Kumaraswamy (2010) reported that the frequency of occurrence of all plural markers was found to be less in CWID compared to TD children in the age range 4-6 years. Kaur (2019) showed that by 4 years of MA Hindi speaking CWID used neutral plurals and masculine plural /a/, with other types being acquired by a MA of 6 years. In Kannada speaking children, regular plural marker /galu/ and unmarked were seen by a MA of 4 years. Group II (5-6 years MA) showed improved performance compared to the 4-5 years MA group.

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.9 shows that the performance by Group I TD and Group I CWID (MA 4-5 years) was similar in their performance on plural usage. About 20% more children of the TD group used the plurals but the difference was not statistically significant.

Table 4.9

Cross comparison of Plural Markers between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Plurals	Group I	n= 10	Group I	n= 30	Z	P	Significance

	TD 4-5 years	%	CWID 4-5 years MA	%	Value		
Suffix / –kal/	9	90.0%	21	70.0%	1.26	0.214	NS
Suffix /–mar/	6	60.0%	12	40.0%	1.10	0.278	NS
Suffix /–ar/	0	.0%	0	.0%	-	-	NS
Numeral suffix	10	100.0%	22	73.3%	1.83	0.076	NS

HS- Highly significant, S – Significant, NS-No significance

Table 4.10 compared higher age groups. As expected, both higher age Group II children used plurals frequently. High statistical significance was noted for the suffix /ar/ with about 50% of Group II (5-6 years) TD children using it. The results are support those of Subbarao,1995 and Kumaraswamy, 2021; and Kaur (2019) who noted similar patterns in using plural forms by Kannada and Hindi speaking children of similar age.

Table 4.10

Cross comparison of Plural Markers between 5-6 Years TD & 5-6 Years MA matched CWID with statistical evidence.

Plurals	Group II TD 5-6 years	n= 10 %	Group II CWID 5-6 years MA	n= 30 %	Z Value	P	Significance
Suffix /–kal/	10	100.0%	27	90.0%	1.04	0.305	NS
Suffix /–mar/	8	80.0%	18	60.0%	1.15	0.258	NS
Suffix /–ar/	5	50.0%	0	.0%	4.14	0.000	HS
Numeral suffix	10	100.0 %	26	86.7%	1.22	0.231	NS

HS- Highly significant, S – Significant, NS-No significance

Scan 6: Tense markers

TD children

It can be seen from Table 4.11, that all regular tense markers are used by all the children of both Group I (4-5 years) and Group II (5-6 years). The difference was not statistically significant between the groups. It may be noted that tense markers in Malayalam are morphologically distinct but the same tense form may be used to refer to more than one-time period.

Table 4.11

Tense Markers in TD Children with statistical evidence.

Tenses	**Group I TD 5-6 years**	**n = 10 %**	**Group II TD 5-6 years**	**n= 10 %**	**Z Value**	**P**	**Significance**
Past	10	100.0%	10	100.0%	-	-	NS
Present	10	100.0%	10	100.0%	-	-	NS
Future	10	100.0%	10	100.0%	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

Sreedevi (1976) reported that Kannada speaking two-year-old children acquired past and present forms. Future habitual forms were noted in 4-year-old Kannada speaking children (Vijayalaxmi, 1981). Contingent forms were not acquired by six-year-old children (Subbarao, 1995). Kaur (2019) found-that tense forms were used by Hindi speaking children by 4 years, with present tense being frequently used. The results of the present study is in general agreement with the findings of these studies.

Some examples used by TD children are:

Past: /sinima kantu/ ‘watched film’

Present: / aankuṭṭi kalikkunnu/ ‘boy is playing

Future: /tiiccaṛ paṭhippikkum/ ‘teacher will teach’

CWID

Table 4.12 shows that both Group I and II CWID perform in a very similar pattern in using tense forms. Although no statistical difference was found, it can be observed that all 5-6 years MA Group II children used present tense forms (e.g., /ñaan varakkunnu/ 'I am drawing') Children were noted to use future tense forms inconsistently. Notably, CWID groups were not using future tense markers, while referring to self-activities. *For example,* /ooṇu kaḷiccu/ (ate food) instead of /ooṇu kaḷikkum/ (will eat lunch).

Table 4.12

Tense Markers in CWID with statistical evidence.

	Group I CWID 5-6 years MA	**n = 30 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Past	25	83.3%	27	90.0%	.76	.451	NS
Present	28	93.3%	30	100.0%	1.44	.156	NS
Future	22	73.3%	25	83.3%	.94	.351	NS

HS- Highly significant, S – Significant, NS-No significance

The results of the present study are consistent with the predominance of present and past markers in MA 4-6 year CWID in Kannada (Subbarao, 1995' Kumaraswamy,2021) and Hindi (Kaur, 2019) studies. A study by Nitha and Subbarao (2010) in Malayalam speaking children also supports the results of the present study. Language specificity is an important factor to be considered while making these comparisons.

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.13 compares Group I (MA 4-5 years) CWID with Group I TD children on using tense markers. It can be noted that the pattern of usage of tense markers is similar. Present tense is most similar followed by past and future markers. The same pattern is observed when Group II (5-6 years) TD and Group II (MA 5-6 years) CWID groups are compared (Table 4.14). No statistical difference was noted

for both comparisons. Present and past tense markers are well acquired in a comparable manner by CWID.

Table 4.13

Cross comparison of Tense Markers between 4-5 Years TD & 4-5 years MA matched CWID with statistical evidence.

Tenses	**Group I TD 4 -5 years**	**n = 10 %**	**Group I CWID 4- 5 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Past	10	100.0%	25	83.3%	1.38	0.176	NS
Present	10	100.0%	28	93.3%	.84	0.407	NS
Future	10	100.0%	22	73.3%	1.83	0.076	NS

HS- Highly significant, S – Significant, NS-No significance

Table 4.14

Cross comparison of Tense Markers between 5-6 Years TD & 5-6 years CWID with statistical evidence.

Tenses	**Group II TD 5-6 years**	**n = 10 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Past	10	100.0%	27	90.0%	1.04	0.305	NS
Present	10	100.0%	30	100.0%	-	-	NS
Future	10	100.0%	25	83.3%	1.38	0.176	NS

HS- Highly significant, S – Significant, NS-No significance

Scan 7: PNG markers

The verb in Malayalam is not marked for number and gender. The suffix /-n/ marks masculine and suffix /-i/ marks feminine gender. Person markers are changed as per semantic needs. Nine PNG markers were analyzed

TD children

Table 4.15 compares the number and the percentage of Group I and Group II TD children on using PNG markers. In both Group I (4-5 years) and Group II (5-6 years), almost all children used first person singular and plural, second person singular, third person singular and plural forms. The differences were observed for second person plural and third person plural neutral markers. Second person plural /-niŋnal/was observed in 50% of Group I and 100% in higher age Group II. The difference was statistically significant. Similar trends were seen for III-person neutral, however, 80% of higher age Group II used it as compared to 100% of lower age Group I. The difference was not significant. Overall, TD children have shown a well-developed PNG system.

Table 4.15

PNG Markers in TD Children with statistical evidence.

PNG markers	Group I TD 4-5 years	n = 10 %	Group II TD 5-6 years MA	n = 10 %	Z Value	P	Significance
I person singular/-ñaan/	10	100	10	100	-	-	NS
I person plural /-ñaŋŋal/ naam/ nammaḷ/	10	100%	10	100 %	-	-	NS
II person singular /- nii/	10	100%	10	100 %	-	-	NS
II person plural /- niŋŋal/	5	50%	10	100 %	2.58	0.019	S
III person singular male /-avan/ivan/	10	100%	10	100 %	-	-	NS
III person singular female /-avaḷ, ivaḷ/	10	100%	10	100 %	-	-	NS
III person singular neutral /-atu/itu/	10	100%	10	100 %	-	-	NS
III person plural /-avaṛ/ivaṛ/	10	100%	10	100 %	-	-	NS
III person plural neutral /-ava/iva/	0	0%	8	80%	3.65	0.002	HS

HS- Highly significant, S – Significant, NS-No significance

In a similar study of Kannada speaking children, Subbarao (1995) found that second person singular and plural as well as neutral plural markers were not found.

Neutral plural markers were seen in all children of higher age group of 5-6 years. Other PNG markers were acquired by children of 4-5 years. The differences appear to be when language occurs in spoken or written form. Another possibility is the data collected now is recent compared to study by Subbarao (1995) which may reflect language development changes (generational changes). Kumaraswamy (2021) also reported a slight variation, that by 5-6 years, neuter plural markers were used. Some variations could be due to the conversational nature of data collection i.e., conversation where children initiated few conversational cycles. Prema (1979) reported that gender and number markers were not stable. It was noted that lack of second person markers usage could be due to the nature of data collection, where children were basically required to answer or respond to adult stimuli.

CWID

Table 4.16 presents the number and percentages of CWID producing PNG markers. In the lower MA Group, I, all children used singular forms of first, second and third persons for both male and female forms. The difficult PNG markers were first person plural (76.6%), second person plural (40%) and third person plural (50%). Third person plural neutral was not used. In all these markers, higher MA (5-6 years) Group II children performed statistically better. The results in general suggest that by 5-6 years MA, the PNG marker system is established in CWID.

Table 4.16

PNG Markers in CWID with statistical evidence.

PNG	Group I CWID 4-5 years MA	n= 30 %	Group II CWID 5-6 years MA	n= 30 %	Z Value	P	Significance
I person singular/-ñaan/	30	100%	30	100%	-	-	NS
I person plural /-ñaŋŋal/ naam/ nammaḷ/	23	76.6%	30	100%	2.82	0.007	HS
II person singular	30	100%	30	100%	-	-	NS

/- nii/							
II person plural /- niŋŋal/	12	40 %	26	86.6%	3.75	0.000	HS
III person singular male /-avan/ivan/	30	100%	30	100%	-	-	NS
III person singular female /-avaḷ, ivaḷ/	30	100%	30	100%	1.01	0.317	NS
III person singular neutral /-atu/itu/	30	100%	30	100%	-	-	NS
III person plural /-avaṛ/ivaṛ/	15	50%	25	83.3%	2.74	0.008	HS
III person plural neutral /-ava/iva/	0	0	17	56.6%	4.87	0.000	HS

HS- Highly significant, S – Significant, NS-No significance

The results are in general agreement with the Malayalam study by Priyanka and Kumaraswamy (2018), the Kannada study (Subbarao,1995; Kumaraswamy, 2021) and the Hindi study (Kaur, 2019). Language specific issues like honorific markers and III person plural markers were similar in Kannada and wishful markers /-na/ were difficult for CWID.

Some examples of PNG markers in CWID in the present study are:

I person singular /-ñaan/: /ñaan tinnu/ (I ate)

I person plural /-nammaḷ/ :/ /nammaḷ kaḷikkum / (we will play)

III person singular male /- avan/: /avan ooṭunnu/ (He is running)

III person singular neutral /-itu/ /itu irikkunnu / (It {dog} is sitting)

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.17 compares Group I (4-5 years) TD and Group I (MA 5-6 years) CWID using PNG markers. Both groups perform similarly except in the case of first

person plural marker and third person plural markers where TD children performed better. The differences were statistically significant. Third person plural neutral was not used by both groups.

Table 4.17

PNG Markers between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

PNG	**Group I TD 4-5 years**	**n = 10 %**	**Group I CWID 4-5 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
I person singular/- ñaan/	10	100%	30	100%	-	-	NS
I person plural /-ñaŋŋal/ naam/ nammaḷ/	10	100%	23	76.6%	1.68	0.101	NS
II person singular /- nii/	10	100%	30	100%	-	-	NS
II person plural /- niŋŋal/	5	50%	12	40 %	0.55	0.583	NS
III person singular male /-avan/ivan/	10	100%	30	100 %	-	-	NS
III person singular female /- avaḷ, ivaḷ/	10	100 %	30	100%	0.58	0.562	NS
III person singular neutral /- atu/itu/	10	100%	30	100%	-	-	NS
III person plural /-avaṛ/ivaṛ/	10	100%	15	50%	2.83	0.007	HS
III person plural neutral /-ava/iva/	0	0%	0	0	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

Comparison of higher age groups (Table 4.18) indicates that both Group II (5-6 years) TD and Group II (MA 5-6 years) CWID perform similarly to each other.

Only the plural marker of the third person appears to be less well acquired by CWID. The differences on these third person plurals are highly statistically significant.

Table 4.18

PNG Markers between 5-6 Years TD & 5-6 Years MA matched CWID with statistical evidence.

PNG	**Group II TD 5-6 years**	**n = 10 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
I person singular/-ñaan/	10	100%	30	100%	-	-	NS
I person plural /-ñaŋŋal/ naam/ nammaḷ/	10	100%	30	100%	-	-	NS
II person singular /- nii/	10	100%	30	100%	-	-	NS
II person plural /- niŋŋal/	10	100%	26	86.6%	1.22	0.231	NS
III person singular male /-avan/ivan/	10	100%	30	100%	-	-	NS
III person singular female /-avaḷ, ivaḷ/	10	100%	30	100%	-	-	NS
III person singular neutral /-atu/itu/	10	100%	30	100%	-	-	NS
III person plural /-avaṛ/ivaṛ/	10	100%	25	83.3%	1.38	0.176	NS
III person plural neutral /-ava/iva/	8	80%	17	56.6%	1.32	0.195	NS

HS- Highly significant, S – Significant, NS-No significance

It can be observed that most PNG markers were used by both TD children and CWID. Third person plural markers were difficult for both groups. The pattern is comparable with similar studies in Kannada (Subbarao, 1995; Kumaraswamy,2021) and Hindi Kaur (2019). The differences of data collection and language specificity need to be explored further.

Scan 8: Case markers

TD children

Malayalam follows a system of marking of grammatical relations and semantic roles through a set of case suffixes, a feature common to Dravidian languages. Seven case markers that are commonly used are analyzed in this scan.

Table 4.19 compares Group I (4-5 years) and Group II (5-6 years) children on their performance on using case markers. Children in both groups show the presence of all case markers. Group comparison shows similar performance with higher age groups performing better. No statistically significant difference was found. Nominative, locative, and genitive markers are seen in all children.

Some examples are:

Nominative: /avan ooṭi/ (he ran)

Locative /-il/: /meeśayil/ (on the table)

Genetive /-nṛe, -uṭe/: /tiiccaṛinṛe peena/ (teacher's pen)

Table 4.19

Case Markers TD Children with statistical evidence.

Case markers	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n= 10 %**	**Z Value**	**P**	**Significance**
Nominative	10	100.0%	10	100.0%	-	-	NS
Accusative / -e/	7	70.0%	9	90.0%	1.12	.278	NS
Dative /–ku, nu/	9	90.0%	9	90.0%	.00	1.000	NS
Sociative /–oṭu/	8	80.0%	9	90.0%	.63	.539	NS
Instrumental /-aal/	8	80.0%	10	100.0%	1.49	.153	NS
Locative / -il/	10	100.0%	10	100.0%	-	-	NS
Genitive – /uṭe, nṛe/	10	100.0%	10	100.0%	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

The results of the present study are supported by Subbarao (1995), who reported that genitive, locative and dative case markers were frequently used by 4-year-old Kannada speaking children. The results slightly vary in Hindi speaking children, as possessive and objective case markers were frequent in 5-6 year olds (Kaur, 2019). The differences could be due to the individual characteristics of the Hindi language.

CWID

On examination of Table 4.20 it can be observed that uneven performance is seen in both Group I (MA 4-5 years) and Group II (MA 5-6 years), in the usage of case markers. No case marker was used by all children of either Group. Nominative, dative, locative and genitive case markers were used by more than 60% of children in Group I. Group II children used the same markers in a higher percentage of children. The pattern in both groups is similar. The differences were not statistically significant. Mohan and Kumaraswamy (2015) studied the acquisition of case markers in Malayalam speaking CWID having an MA range of 3-8 years and reported that there is a general increase in the acquisition as well as frequency of usage of some type of case markers with increase in the MA of the children. The findings support the present study. Similar results are reported in Kannada speaking children (Subbarao, 1995). Hindi speaking children showed case markers usage in their samples after 5-6 years MA. Language specific differences appear to be important (Kaur, 2019).

Some examples are:

Accusative /-e/: /paavaye aṭiccu/ (beat the doll)

Dative /-ku, nu/: /ñaan tannu/ (I give me) Instead of /enikku tannu/ (gave to me)

Sociative /-ooṭu/: /daivam praarthikkunnu/ (god is praying) Instead of /daivattinootu praarthikkunnu/ (will pray to God)

Instrumental /-aal, -kontu/: /peena eluti/ (Pen wrote) Instead of /peena kontu eluti/ (wrote with pen)

Table 4.20

Case Markers in CWID with statistical evidence.

Case markers	Group I CWID 4-5 year MA	n= 30 %	Group II CWID 5-6 years MA	n = 30 %	Z Value	P	Significance
Nominative	22	73.3%	25	83.3%	.94	.351	NS
Accusative / -e/	16	53.3%	21	70.0%	1.33	.189	NS
Dative /– ku, nu/	21	70.0%	23	76.7%	.58	.562	NS
Sociative /– oṭu/	12	40.0%	19	63.3%	1.81	.076	NS
Instrumental /-aal/	11	36.7%	16	53.3%	1.30	.200	NS
Locative / -il/	20	66.7%	23	76.7%	.86	.394	NS
Genitive – /uṭe, nṟe/	20	66.7%	25	83.3%	1.49	.141	NS

HS- Highly significant, S – Significant, NS-No significance

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.21 shows the comparison between Group I (4-5 years) TD children and Group I (MA 4-5 years) CWID. The results show a consistently lesser usage of the case system by CWID as compared to TD counter parts. Statistically significant differences were noted for sociative, instrumental, locative, and genitive case markers.

Table 4.21

Case Markers between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Case markers	Group I TD 4-5 years	n = 10 %	Group I CWID 4-5 years MA	n = 30 %	Z Value	P	Significance
Nominative	10	100.0%	22	73.3 %	1.83	0.076	NS
Accusative / -e/	7	70.0%	16	53.3 %	.92	0.362	NS

Dative /–ku, nu/	9	90.0%	21	70.0 %	1.26	0.214	NS
Sociative /–oṭu/	8	80.0%	12	40.0 %	2.19	0.035	Sig
Instrumental /-aal/	8	80.0%	11	36.7 %	2.38	0.023	Sig
Locative /-il/	10	100.0%	20	66.7 %	2.11	0.042	Sig
Genitive –/uṭe, nṟe/	10	100.0%	20	66.7 %	2.11	0.042	Sig

HS- Highly significant, S – Significant, NS-No significance

Table 4.22 compares higher age groups. On most case markers higher MA (5-6 years) Group II CWID perform comparably to Group II (5-6 years) TD children. No statistically significant differences were noted for case markers with one exception. The instrumental case marker was used in 100 % of the TD group while only 53.3% of the CWID group used the marker. The difference was found to be statistically significant.

Table 4.22

Case Markers between 5-6 years TD & 5-6 Years MA CWID with statistical evidence.

Case markers	**Group II TD 5-6 years**	**n= 10 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Nominative	10	100.0%	25	83.3%	1.38	0.176	NS
Accusative / -e/	9	90.0%	21	70.0%	1.26	0.214	NS
Dative /–ku, nu/	9	90.0%	23	76.7%	.91	0.367	NS
Sociative /–oṭu/	9	90.0%	19	63.3%	1.59	0.119	NS
Instrumental /-aal/	10	100.0%	16	53.3%	2.68	0.011	Sig
Locative / -il/	10	100.0%	23	76.7%	1.68	0.101	NS
Genitive –/uṭe,nṟe/	10	100.0%	25	83.3%	1.38	0.176	NS

HS- Highly significant, S – Significant, NS-No significance

Results in general indicate that younger age participants show poorer performance in case usage. As age increases, Group II participants show very similar

performances. These results are consistent with Subbarao (1995) in Kannada speaking children.

Scan 9: Transitives, Intransitives, and Causatives

TD children

On examination of Table 4.23 it can be noted that all the three verb forms - transitives, intransitives and causatives were used by all the children in both Group I (4-5 years) and Group II (5-6 years). The results indicate that by 4-6 years' verb forms in Malayalam are acquired. The results are generally supported by previous studies on Kannada speaking children. Vijayalaxmi (1981) reported that between 2 - 2.6 years' simple transitive and intransitive sentences are expressed by Kannada speaking TD children and causatives are used by 4-5 years old children. These results are also supported by Uma (1993). Subbarao (1995) also reported that all three types - transitive, intransitive and causatives are used by 4-6 year-old Kannada speaking TD children. Additionally, Kaur (2019) found that transitives were completely developed in Hindi speaking children by 4 years, intransitives also appeared from 4 years onwards, but these were less frequently used by children when compared to transitives. Usage of causatives was limited in 4 to 6 year-old children.

Table 4.23

Transitives, Intransitives & Causatives in TD Children with statistical evidence.

Transitives Intransitives Quotatives	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n = 10 %**	**Z Value**	**P**	**Significance**
Transitives	10	100%	10	100%	-	-	NS
Intransitives	10	100%	10	100%	-	-	NS
Causatives	10	100.0%	10	100.0%	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

CWID

Table: 4.24 Shows that 100% of both Group I and II CWID used transitives and intransitive forms of the verb. Causatives were used by 46.7% of Group I and 66.7 % of Group II children. Overall, causatives were found to be less frequent;

however, the differences were not statistically significant. The results of the present study support those of Subbarao (1995) who reported that all of the Kannada speaking CWID in both the lower MA (4-5 years) and higher MA (5-6 years) groups used transitive and intransitive forms. Causative forms were used by about 50% of the children in both groups. Kaur (2019) reported that similar to Hindi speaking TD children, CWID also showed a similar pattern in the usage of transitives and intransitives. But the causatives were not all developed in CWID. The results of both Dravidian languages appear to be similar.

Some examples of verb forms usage by both TD and CWID children are given below:

Transitives / ೇnaan appam tiṉṉu/ (I ate appam)

Intransitives /aanṛi cirikkuṉṉu/ (aunty is smiling)

Causatives /-uṉṉu/ causative (present) /paavaye kalippikkuṉṉu/ (make the doll play)

/-kkum/ causative (future) /tiiccaṛ patippikkum/ (teacher will teach)

/-iccu/ causative (past) /tiiccar patippiccu/ (teacher taught)

Table 4.24

Transitives, Intransitives & Causatives in CWID with statistical evidence.

Transitives, intransitives & causatives	**Group I CWID 4-5 year MA**	**n= 30 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Transitives	30	100%	30	100%	-	-	NS
Intransitives	28	93.3%	30	100%	1.44	0.156	NS
Causatives	14	46.7%	20	66.7%	1.56	.123	NS

HS- Highly significant, S – Significant, NS-No significance

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.25 shows the comparison of the presence of verb forms transitives, intransitives and causatives in Group I (4-5 years) TD and Group I (MA 4-5 years)

CWID. The Patterns of usage of transitives and intransitives were similar. On causatives, 46.7% of CWID used it as compared to 100% of TD children. This difference was found to be highly statistically significant.

Table 4.25

Transitives, Intransitives & Causatives between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Transitives, intransitives Causatives	**Group I TD 4-5 years**	**N = 10 %**	**Group I CWID 4-5 years MA**	**N = 30 %**	**Z Value**	**P**	**Significance**
Transitives	10	100%	30	100%	-	-	NS
Intransitives	10	100%	28	93.3%	0.84	0.407	NS
Causatives	10	100.0%	14	46.7%	2.98	0.005	HS

HS- Highly significant, S – Significant, NS-No significance

Table 4.26 shows the presence of transitives, intransitives, and causatives in Group II (5-6 years) TD and Group II (MA 5-6 years) CWID. All children in Group II (5-6 years) used causatives. Higher MA (5-6 years) Group II CWID show about 66.7 % presence of causatives. The differences were statistically significant.

Overall, both TD and CWID of 4-6 years show the acquisition of transitive and intransitive verb forms of Malayalam. Causatives were found less in CWID groups.

Table 4.26

Transitives, Intransitives & Causatives Between 5-6 years TD & 5-6 Years MA matched CWID with statistical evidence.

Transitives, intransitives & causatives	**Group II TD 5-6 years**	**n= 10 %**	**Group II CWID 5-6 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Transitives	10	100%	30	100%	-	-	NS
Intransitives	10	100%	30	100%	-	-	NS
Causatives	10	100.0%	20	66.7%	2.11	0.042	Sig

HS- Highly significant, S – Significant, NS-No significance

Scan 10: Sentence types

Malayalam sentences considered for scan in this study are several types of interrogative sentences, declaratives, adjectival, quotative or reported sentences, possessions, negation sentences, imperative sentences, affirmative sentence, reduplicated sentences, and reflexive sentences. A total of 12 sentence types were considered.

TD children

Table 4.27 compares Group I (4-5 years) and Group II (5-6 years) children on the performance of using sentence types. Children in both groups used the sentence types: interrogatives Y/N, 'Wh' questions, adjectival, declarative, negation, quotatives and possession sentences.

Younger age Group I (4-5 years) children used sentence types in lesser percentages than Group II (5-6 years). This observation was noted for interrogative tag, affirmative, reduplicated, and reflexive sentences. On these types, the higher age group performed better than Group I. The differences were found to be statistically significant. Imperative sentences were not used by either groups. The results indicate that TD children used almost all sentence types except for imperatives. The percentage of children using many sentence types increased with age.

Table 4.27

Sentence Types in TD Children with statistical evidence.

Sentence types	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n= 10 %**	**Z Value**	**P**	**Significance**
Interrogative y/n	10	100.0%	10	100%	-	-	NS
Wh' question	10	100.0%	10	100%	-	-	NS
Interrogative tag	5	50%	8	80%	1.41	0.177	NS
Adjectival use	10	100%	10	100%	-	-	NS
Declaratives	10	100%	10	100%	-	-	NS
Negation	10	100%	10	100%	-	-	NS
Affirmative sentences	6	60%	10	100%	2.24	0.038	Sig
Quotatives/	10	100%	10	100%	-	-	NS

Reported sentences							
Imperative sentences	0	0	0	0	-	-	NS
Reduplicated sentences	7	70%	9	90%	1.88	0.077	NS
Possession	10	100%	10	100%	-	-	NS
Reflexive sentences	4	40%	6	60%	0.89	0.383	NS

HS- Highly significant, S – Significant, NS-No significance

These results are in general agreement with Subbarao (1995) who studied a similar age group of Kannada speaking children, for frequently used types of sentences. However, the results differ for reduplicated sentences and permissive sentences. These sentences were not observed or least observed as compared to the present study. Similar to the present study, imperatives were found to be absent in Kannada speaking children too. Language differences in learning to communicate appear to be the main reason for noted differences. Imperatives not used by the 5-6 year-olds appear to be due to differences in data collection where children were mostly responders. In conversational mode, children basically responded to adult stimuli.

Some examples used by TD children are given below:

Interrogative y/n /-oo/: /aanṛi naale varumoo? / (aunt will you come tomorrow)

"Wh' question: /itu enta/ (what is this?)

Interrogative tag /-alle/: /aanṛi tiiccaṛ, alle? / (Aunt is teacher, aren't you)

Adjectival use: /enikku viiṭṭil valiya baaḷ untu / (I have big ball at home)

Declaratives: /atu peena aaṇu/ (That is a pen)/

Negation /-alla/: /itu entetalla/ (This is not mine)

Affirmative sentences: /enikku saikkiḷ oottikkaan ariyaam/ (I know to ride cycle)

Quotatives/ reportives /-ennu/: /ñaan miṭukkanaanennu tiiccar parañña (Teacher told that I am a smart boy)

Reduplicated: /ñaan onnonnai tinnum / (I will eat one by one)

Possessive /enṛe maala/ (My chain)

Reflexive/-tanne/: / ñaan tannettaane tinnum/ (I will eat myself)

CWID

Table 4.28 presents the percentage of CWID using sentence types. All children in both Group I (4-5 years MA) and Group II (5-6 years MA) used the sentence types 'Wh' questions, declaratives, adjectival use and possession sentences. Negation sentences were used by more than 80% in both groups. Sentence types, interrogative tag, quotatives, affirmative and reduplicated sentences were used by nearly 40% of the Group I and 60% of the Group II children. The results indicate that some of these sentences are still difficult for CWID. Further, some sentence types, namely Y/N questions, imperatives and reflexive sentences were not seen in either group. Statistical difference occurred for interrogative tags and affirmative sentences. In general, it can be concluded that CWID showed simple sentences and phrases basically responding to the investigator's stimuli sentences. It was noted that when children could not recall the words to complete the sentence, they pointed to the objects. Although children used words for simple adjectives (e.g., color names) they did not use them in sentences.

Some examples of sentences used by CWID are given below:

'Wh' question: /itu enta/ (What is this)
/aanṛiṭe viiṭu eviṭeya/ (where is aunt's house)

Interrogative tag /-alle/: /itu ooṭṭo, alle? / (It is an auto, is it not?)

Adjectival use: /putiya uṭuppu/ (new dress)

Declaratives: /itu kiḷiyaaṇu/ (this is a bird)

Negation /-alla/: /peenayalla/ (This is not a pen)

Affirmative sentences: /enikku ariyaam / (I know)

Quotatives/ reportives (-ennu): /aanṛi vilikkunnu/ inappropriate use of Quotatives (aanṛi vilikkunnu ennu tiiccar paraññu) instead of (Teacher told aunt is calling)

Reduplicated: Inappropriate use /onn̲u/ (one) instead of onnonnai (one by one)

Possessive: /enṛe peena / (my pen)

Table 4.28

Sentence Types in CWID with statistical evidence.

Sentence types	**Group I CWID 4-5 year MA**	**n= 30 %**	**Group II CWID 5-6 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Interrogative y/n	0	0	0	0	-	-	NS
Wh' question	30	100%	30	100%	-	-	NS
Interrogative tag	14	46.6%	22	73.3%	2.11	0.039	Sig
Adjectival use	30	100%	30	100%	-	-	NS
Declaratives	30	100%	30	100%	-	-	NS
Negation	26	86.6%	28	93.3%	0.86	0.393	NS
Affirmative sentences	12	40%	21	70%	2.34	0.023	Sig
Quotatives/Reported sentences	14	46.6%	20	66.6%	1.56	0.123	NS
Imperative sentences	0	0	0	0	-	-	NS
Reduplicated sentences	14	46.65	17	56.6%	0.78	0.441	NS
Possession	30	100%	30	100%	-	-	NS
Reflexive sentences	0	0	0	0	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

The results are in general agreement with studies on Kannada speaking children (Subbarao, 1995). Kumaraswamy (2021) reported a slight variation from the study by Subbarao (1995) that reduplicated 'Wh' interrogative utterances which were not frequently by CWID in his study. A reason for changes could be that language development patterns change with time. Kaur (2019) reported that only simple, affirmative sentences with no occurrence of complexity in sentences were seen in 5-6-year-

old Hindi speaking CWID. The language data on Dravidian languages: Kannada and Malayalam appear to be comparable.

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.29 compares Group I (4-5) TD children and Group I (4-5 years MA) CWID. Comparable performance was observed for 'WH' questions, interrogatives, adjectives, declarative, and possession sentences, whereas 80% or more of both groups of children showed the presence of the above said sentences.

Sentence types Y/N interrogatives, negation, affirmatives, quotatives and reduplicated types, were seen in Group I (4-5 years) TD children more than Group I (4-5 years MA) CWID. The differences were statistically significant. Sentence type imperatives was not seen in either group.

Table 4.29

Sentence types *between 4-5 Years TD and 4-5 Years MA matched CWID with statistical evidence.*

Sentence types	**Group I TD 4-5 years**	**n= 10 %**	**Group I CWID 4-5years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Interrogative y/n	10	100.0%	0	0	6.32	0.000	HS
Wh' question	10	100.0%	30	100%	-	-	NS
Interrogative tag	5	50%	14	46.6%	0.18	0.856	NS
Adjectival use	10	100%	30	100%	-	-	NS
Declaratives	10	100%	30	100%	-	-	NS
Negation	10	100%	26	86.6%	1.22	0.231	NS
Affirmative sentences	6	60%	12	40%	1.10	0.278	NS
Quotatives/Reported sentences	10	100%	14	46.6%	2.98	0.005	HS
Imperative sentences	0	0	0	0	-	-	NS
Reduplicated sentences	7	70%	14	46.65	1.28	0.208	NS
Possession	10	100%	30	100%	-	-	NS
Reflexive sentences	4	40%	0	0	3.65	0.001	HS

HS- Highly significant, S – Significant, NS-No significance

Generally, the results show a similar pattern of sentence type acquisition across groups for a majority of sentence types. The group II 5-6 years MA) CWID closely follow the performance of Group II (5-6 years) TD children except in Interrogative yes/no sentence type and reflexive sentence types. Table 4.30 shows that significant differences between Group II (5-6 years) TD and Group II (5-6 years MA) CWID group exist for a few sentence types. For example, on interrogative Y/N, affirmative and reflexive sentences, CWID groups have performed poorly. On other sentence types the pattern is highly similar. The findings in general indicate that with higher age, sentences are acquired with more consistency. It should be noted that few sentences are yet to be acquired by CWID group. A general delay hypothesis does not fit the explanation. Language differences, cognitive issues and pragmatic needs need to be explored to explain the differences.

Table 4.30

Sentence Types between 5-6 years TD & 5-6 Years MA matched CWID with statistical evidence.

Sentence types	**Group II TD 5-6 years**	**n = 10 %**	**Group II CWID 5-6 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Interrogative y/n	10	100%	0	0	6.32	0.000	HS
Wh' question	10	100%	30	100%	-	-	NS
Interrogative tag	8	80%	22	73.3 %	0.42	0.676	NS
Adjectival use	10	100%	30	100%	-	-	NS
Declaratives	10	100%	30	100%	-	-	NS
Negation	10	100%	28	93.3 %	0.84	0.407	NS
Affirmative sentences	10	100%	21	70%	1.97	0.056	NS
Quotatives/Reported sentences	10	100%	20	66.6 %	2.11	0.042	Sig
Imperative sentences	0	0	0	0	-	-	NS
Reduplicated sentences	9	90%	17	56.6 %	2.53	0.016	Sig
Possession	10	100%	30	100%	-	-	NS
Reflexive sentences	6	60%	0	0	4.60	0.000	HS

HS- Highly significant, S – Significant, NS-No significance

Scan 11: Conjunctions, Comparatives and Quotatives

Malayalam predominantly uses /-um/ or /yum/ as conjunctions and comparatives /-itilum nalla/ (better) and /-eeṛṛavum / (to express best) are used most commonly. The quotative marker that is commonly used is /-ennu/ (said that).

TD children

Table 4.31 shows that both Group I (4-5 years) and Group II (5-6 years) children show the usage of conjunction /-um/. Comparatives present a different picture. Comparative /-itilum nalla/ was not found in the samples of Group I (4-5 years) children and in only 40% of Group II (5-6 years). The differences were statistically significant. Quotative /-ennu/ was used by more than 70% of children in both groups.

Table 4.31

Conjunctions, Comparatives and Quotatives in TD Children with statistical evidence.

Conjunctions Comparatives & Quotatives	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n = 10 %**	**Z Value**	**P**	**Significance**
Conjunction /–um/	10	100.0%	10	100.0%	-	-	NS
Comparative –/itilum nalla/	0	.0%	4	40.0%	2.24	.038	Sig
Comparatives/ – eeṛṛavum	2	20.0%	7	70.0%	2.25	.037	Sig
Quotatives /–ennu/	7	70.0%	10	100.0%	1.88	.077	NS

HS- Highly significant, S – Significant, NS-No significance

CWID

The within group comparison shown in table 4.32 indicates that about 50-60% of children in both groups of lower and higher MA use conjunctions. On using quotatives /-ennu/, higher MA Group II (5-6 years) children show increased usage. However, the differences are not statistically significant. Comparatives were not used by CWID.

Table 4.32

Conjunctions, Comparatives & Quotatives present in CWID with statistical evidence.

Conjunctions, Comparatives & Quotatives	**Group I CWID 4-5 year MA**	**n= 30 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Conjunction /–um/	16	53.3%	20	66.7%	1.05	.296	NS
Comparative –/itilum nalla/	0	.0%	0	.0%	-	-	NS
Comparatives/ – eeṟṟavum	0	.0%	0	.0%	-	-	NS
Quotatives /–ennu/	11	36.7%	18	60.0%	1.81	.076	NS

HS- Highly significant, S – Significant, NS-No significance

Kannada speaking CWID, did not use Conjunctions, Comparatives and Quotatives structures except for the conjunction/-u/ (Subbarao, 1995; Kumaraswamy, 2021). The present study shows better performance on using Conjunctions and Quotatives. The reason for these differences could be that CWID are better trained by Speech Language Therapists and special educators as the data is of recent origin compared to the Kannada study by Subbarao (1995). The nature of Malayalam language could be another reason.

Findings on Hindi speaking CWID by Kaur (2019) showed that 40% of lower MA group (MA 4-5 years) and 60-80% of higher MA group (MA 5-6 years) used Conjunctions. However, comparatives and quotatives were not used by either group. These differences could be due to natural differences in these languages and require further exploration.

Some examples used by children in the present study are:

Conjunction /-um/: ceeṭṭanum ceecci (missing /-um/ in the second noun)

Quotatives /-ennu/: /tiiccar, ñaan miṭukki aanennu paraññu/ (teacher said that i am a good girl)

Comparative /-itilum nalla/: / itilum nalla phoṇ/ (phone is better than)

Comparative /-eeṛṛavum/:/eeṛṛavum valiya phoṇ accanuṉtu/ (my father has best phone)

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.33 shows comparison between younger groups of TD and CWID. Lower MA (4-5 years) CWID showed a 53% presence of conjunctions as compared to 100% of Group I TD children. The difference is significant statistically. Quotatives were also found to be significantly different between groups.

Table 4.33

Conjunctions, Comparatives and Quotatives between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Conjunctions , Comparatives & Quotatives	**Group I TD 4-5 years**	**n = 10 %**	**Group I CWID 4-5 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Conjunction /–um/	10	100.0%	16	53.3 %	2.68	0.004	HS
Comparative –/itilum nalla/	0	.0%	0	.0%	-	-	NS
Comparatives/ – eeṛṛavum	2	20.0%	0	.0%	2.51	0.006	HS
Quotatives /–ennu/	7	70.0%	11	36.7 %	1.83	0.033	Sig

HS- Highly significant, S – Significant, NS-No significance

Higher age groups are compared in Table 4.34. All children in Group II (5-6 years) used conjunctions and quotatives. Higher MA (5-6 years) Group II CWID showed about a 60% presence of these structures as compared to 100% of the TD group. The differences were statistically significant. Comparatives were absent in both Groups.

Table 4.34

Conjunctions, Comparatives and Quotatives between 5-6 Years TD & 5-6 Years MA matched CWID with statistical evidence.

Conjunctions Comparatives, & Quotatives	**Group II TD 5-6 years**	**n = 10 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Conjunction /–um/	10	100.0%	20	66.7%	2.11	0.018	Sig
Comparative –/itilum nalla/	4	40.0%	0	.0%	3.65	0.000	HS
Comparatives/ – eerṛavum	7	70.0%	0	.0%	5.05	0.000	HS
Quotatives /–ennu/	10	100.0%	18	60.0%	2.39	0.008	HS

HS- Highly significant, S – Significant, NS-No significance

Scan 12: Conditional clauses

Malayalam uses suffixes /-aal/ (e.g., /vannaal/ (if comes) and /-eŋkil/ (e.g., ceyyumeŋkil/ (if you do), and unfulfilled condition /-eŋkil+ complex verb form/ (e.g., mala peytirunneŋkil cuuṭu kuraññeene/ (had it rained, the heat would decrease) commonly to express conditional clauses. All three structures were considered for analysis.

TD Children

Table 4.35 shows that /-aal/ was used by all children in Group I and II. Clause /-eŋkil/ was used by 30% of 4-5 year olds, but it increased to 80% in Group II (5-6 years). Unfulfilled conditional clause /-eŋkil+ complex verb form/ was used by 60% of the Group II children. These two differences were statistically significant. The results in general show that by 5-6 years, conditional clauses were acquired by children in the present study.

Table 4.35

Conditional Clauses in TD Children with statistical evidence.

Conditional clauses	**Group I TD 4-5 years**	**n= 10 %**	**Group II TD 5-6 years**	**n= 10 %**	**Z Value**	**P**	**Significance**
Conditional clause /-aal/	10	100.0%	10	100.0%	-	-	NS
Conditional clause/-eŋkil/	3	30.0%	8	80.0%	2.25	.037	Sig
Unfulfilled conditional clause/- eŋkil + complex verb form/	0	.0%	6	60.0%	2.93	.009	HS

HS- Highly significant, S – Significant, NS-No significance

Subbarao (1995) while examining 4-5-year TD children had indicated that the use of aspectual /-re/ and simple conditional /-are/ were most frequently and he reported that 50% of the children used some of the conditional clauses, but not frequently. The differences in the results are interesting as both Kannada and Malayalam are Dravidian languages. Language acquisition could be different across languages. Kumaraswamy (2021) reported that the conditional clause topic/focus is the only structure (16%) observed in CWID and study almost agree with Subbarao (1995), who reported that none of the conditional clauses were found in CWID. One of the reasons could be that topics of conversation during the data collection have been different between the studies. Kaur (2019) has shown that no conditional clauses were observed in 4-6-year-old Hindi speaking children. Language specific learning by TD children appears to be one important reason.

CWID

Table 4.36 shows that only 40% of Group I (4-5 years MA) and 63.3 % of Group II (5-6 years MA) children used the conditional clause /-aal/. Other structures were not seen in the samples. Subbarao (1995) and Kaur (2019) both reported that conditional clauses were not observed in ID groups of 4-6 years. It is possible that use of such clauses mainly reflects written or literary expressions. It is possible that

Malayalam speakers use more Literary or written forms while speaking as compared to Kannada and Hindi speakers.

Table 4.36

Conditional Clauses in CWID with statistical evidence.

Conditional clauses	**Group I CWID 4-5 year MA**	**n = 30 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Conditional clause /-aal/	12	40.0%	19	63.3%	1.81	.076	NS
Conditional clause/-eŋkil/	0	.0%	0	.0%	-	-	NS
Unfulfilled conditional clause/-eŋkil + complex verb form/	0	.0%	0	.0%	-	-	NS

HS- Highly significant, S – Significant, NS-No significance

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.37 compares Group I children of both TD and CWID groups. Only conditional clause that was seen in both groups was /-aal/. All TD children and 40% of CWID use this conditional clause. The higher performance of TD children was statistically significant. Other conditional clauses were not used by children in either group

Table 4.37

Conditional Clauses between 4-5 years TD & 4-5 years MA matched CWID with statistical evidence.

Conditional clauses	**Group I TD 4-5 years**	**n = 10 %**	**Group I CWID 4-5 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Conditional clause /-aal/	10	100.0%	12	40.0 %	3.30	0.000	HS
Conditional clause/-eŋkil/	3	30.0%	0	.0%	3.12	0.001	HS
Unfulfilled	0	.0%	0	.0%	-	-	NS

conditional clause/- eŋkil + complex verb form/							

HS- Highly significant, S – Significant, NS-No significance

Table 4.38 compares higher age groups. As observed in the lower age Group I comparison, clause /-aal/ was used frequently. Higher MA group performed significantly less on other clauses, when compared to TD counter parts.

Table 4.38

Conditional Clauses between 5-6 years TD & 5-6 years MA matched CWID with statistical evidence.

Conditional clauses	**Group II TD 5-6 years**	**n= 10 %**	**Group II CWID 5-6 years MA**	**n= 30 %**	**Z Value**	**P**	**Significance**
Conditional clause /-aal/	10	100.0%	19	63.3%	2.25	0.012	Sig
Conditional clause/- eŋkil/	8	80.0%	0	.0%	5.48	0.000	HS
Unfulfilled conditional clause/- eŋkil+ complex verb form/	6	60.0%	0	.0%	4.60	0.000	HS

HS- Highly significant, S – Significant, NS-No significance

Overall, the results indicate that conditional clauses are still being acquired by TD children and CWID groups significantly lag behind.

Scan 13: Participle constructions

The present study analyzed three types of participle constructions in Malayalam - Relative present, Relative negative and Verbal.

TD children

Table 4.39 shows that Group I (4-5 years) and Group II (5-6 years) children used the participle construction frequently (70-90%). Even though 20% more Group II children used participle constructions, the statistical difference was not significant. The results were varied from the studies of Kannada speaking TD children where 50% of 4-6-year-old TD children used only verbal participles (Subbarao, 1995). Nature of language use and forms in the spoken form appears to be the reason. The present results are similar in pattern to Hindi speaking children (Kaur, 2019) where 40-60% of TD children used verbal and negative verbal participles.

Table 4.39

Participle Constructions in TD Children with statistical evidence.

Participle construction	**Group I TD 4-5 years**	**n = 10 %**	**Group II TD 5-6 years**	**n= 10 %**	**Z Value**	**P**	**Significance**
Relative: present	7	70.0%	9	90.0%	1.12	.278	NS
Relative :negative	7	70.0%	9	90.0%	1.12	.132	NS
Verbal	7	70.0%	9	90.0%	1.12	.132	NS

HS- Highly significant, S – Significant, NS-No significance

CWID

Table 4.40 compared CWID groups I and II. Both groups have 40-60% of children using all the three participles. No difference is noted statistically. Results align with those of Gupta et al. (2019) who studied the acquisition of participle construction in Malayalam speaking CWID with MA 4-5 and 5-6 years groups. Gupta's results suggested that there is an increase in usage of participle construction with an increase in the MA of Malayalam speaking CWID.

Some examples seen in both groups are:

Relative present: /kiḷi ulla kuuṭu/ (a cage with a bird)

Relative negative: /iŋku illaatta peena/ (pot without ink)

Verbal: /Pakṣikal parannu pookunnu/ (birds are flying.

Table 4.40

Participle Constructions in CWID with statistical evidence.

Participle construction	Group I CWID 4-5 year MA	n = 30 %	Group II CWID 5-6 years MA	n = 30 %	Z Value	P	Significance
Relative: present	15	50.0%	20	66.7%	1.31	.095	NS
Relative :negative	13	43.3%	18	60.0%	1.29	.098	NS
Verbal	14	46.7%	17	56.7%	.78	.219	NS

HS- Highly significant, S – Significant, NS-No significance

CROSS COMPARISON BETWEEN THE GROUPS

Table 4.41 shows the presence of the participle constructions in the Group I (4-5 years) TD and Group I (MA 4-5 years) CWID. 40-50% of the CWID group used the structures as compared to 70% of TD children. The difference is not statistically significant.

Table 4.41

Participle Constructions between 4-5 Years TD & 4-5 Years MA matched CWID with statistical evidence.

Participle construction	Group I TD 4-5 years	n = 10 %	Group I CWID 4-5 years MA	n = 30 %	Z Value	P	Significance
Relative: present	7	70.0%	15	50.0%	1.10	0.135	NS
Relative :negative	7	70.0%	13	43.3%	1.46	0.072	NS
Verbal	7	70.0%	14	46.7%	1.28	0.100	NS

HS- Highly significant, S – Significant, NS-No significance

Higher age group comparison (Table 4.42) shows significant differences. Group II (5-6 years) TD children perform better compared to Group II (MA 5-6 years) CWID. The results in general confirm delayed acquisition by CWID.

Table 4.42

Participle Construction between 5-6 years TD & 5-6 years MA matched CWID with statistical evidence.

Participle construction	**Group II TD 5-6 years**	**n = 10 %**	**Group II CWID 5-6 years MA**	**n = 30 %**	**Z Value**	**P**	**Significance**
Relative: present	16	80.0%	35	58.3%	1.75	0.040	Sig
Relative :negative	16	80.0%	31	51.7%	2.23	0.013	Sig
Verbal	16	80.0%	31	51.7%	2.23	0.013	Sig

HS- Highly significant, S – Significant, NS-No significance

SUMMARY OF SYNTAX ASPECTS IN TD CHILDREN AND CWID

Analysis of syntactic aspects of language featured a diverse/different picture for both TD children and CWID. In general MA matched CWID did more poorly than TD counterparts. On the whole, a delay in syntax development is evident.

Summary of syntax aspects in TD children are as follows:

On Morphophonemic structures, both Group I (4-5 years) and Group II (5-6 years) TD children used the vowel + vowel combination most frequently. Hence no difference in performance by Group I and Group II children was noticed. Consonant combinations were poorly used by both groups. The most frequently used plural forms by both groups were plural /kal/ and numerical suffix followed by suffix /mar/. When half of the higher age group (5-6 years) children used the suffix /ar/, none of the lower age group children (4-5 years) used it. All regular tense markers were used by all the children of both groups. No difference in performance by lower age group and higher age group was noticed. A well-developed PNG system was noticed in both groups of TD children. Differences were observed for only second person plural and third person plural neutral markers. For case markers, children in both groups showed similar performance with the higher age group performing slightly better. Transitives, intransitives, and causatives were used by all TD children in both Group I and Group II. On sentence types, children in both groups used the sentence types: interrogatives Y/N, 'Wh' questions, adjectival, declarative, negation, quotatives and possession sentences. Sentence types like interrogative tag, affirmative, reduplicated and reflexive sentences were used in lesser percentage by lower age group (4-5 years) children than higher age group (5-6 years) children. Imperative sentences were not used by either group. Conjunctions and quotatives were used by both groups of TD children. Comparatives presented a different picture. Comparative /-itilum nalla/ was not found in the samples of Group I (4-5 years) children. Group II children performed better than Group I children in the usage of comparative /-eeṛṛavum/**.** Hence differences were noticed in the usage of comparatives by both groups. Conditional class /-aal/ was used by all children in Group I and II. Clause /-eŋkil/ was used more by Group II (5-6 years) when compared to Group I (4-5 years) children. Unfulfilled

conditional clause /-eŋkil+ complex verb form/ was used by Group II children (60%) and none of the lower age group children used it.

Participle constructions were used by all TD children in both Group I and Group II.

Summary of syntax aspects in CWID are as follows:

On morphophonemic structures, both Group I (4-5 years MA) and Group II (5-6 years MA) CWID used a vowel + vowel combination. Thus, a difference in the performance was not found. The only exception appeared to be vowel + vowel combination /a+e/, where higher MA group children performed better than lower MA group children. Consonant combinations were not found in either group.The most frequently used plural markers by both groups of children were suffix/-kal/ and numeral suffix. Higher MA group children performed better than lower MA group children in the usage of suffix /-mar/. Suffix /-ar/ was not used by any of the children. Present and past tense markers were used by children of both groups. No differences in the lower MA group and higher MA group were noticed. However, children were noted to use future tense forms, but inconsistently. It was noted that CWID were not using future tense markers while referring to self-activities. In the PNG system, children of both groups performed similarly by using I person singular, II-person singular, III-person singular male/female, III-person singular neutral. For lower MA group children, the difficult PNG markers were I person plural and II person plural; III-person plural was not observed in any of the children. In all these markers higher MA children performed better. On case markers, uneven performance is seen in both Group I (MA 4-5 years) and Group II (MA 5-6 years). No case marker was used by children of either Group. Nominative, dative, locative and genitive case markers were used by more than 60% of children in Group I. Group II children used the same markers at a higher percentage. The pattern in both groups is similar. Transitives and intransitives were used by children in both groups. Higher MA group children performed better than lower MA group children in the usage of causatives, however significant differences were not found. On sentence types, all children in both groups used the sentence types 'Wh' questions, declaratives, negation, adjectival use and possession sentences. Sentence types like interrogative tag, quotatives, affirmative and reduplicated sentences were used more by higher MA Group II children when

compared to lower MA Group I children. Some of these sentences are still difficult for CWID. Some sentence types, namely, Y/N questions, imperatives and reflexive sentences were not seen in either group. Thus, differences in performance appear to be mainly for interrogative tags and affirmative sentences. Conjunction was used by 50-60% of children in both groups of lower and higher MA. On using quotatives /-ennu/, higher MA Group II (5-6 years) children showed increased usage. However, significant differences in performance were not seen. Comparatives were not used by any of the CWID. Conditional clause /-aal/ was used by only 40% of Group I (4-5 years MA) and 63.3 % of Group II (5-6 years MA) children. Other conditional clause structures were not seen in the samples of both groups of children. Participle construction was used by 40-60% of children in both groups.

DISCUSSION

Speech Language Pathologists (SLPs) in India are actively involved in speech language therapy. In recent times several factors such as increasing special education services, improving awareness and economic levels of parents of children with language deficits have influenced SLPs to strive for standardized assessment and therapy approaches. Several investigators have examined linguistic structures in Kannada (Kumaraswamy, 2021; Subbarao,1995); in Tamil (Karthikeyan, 2003) and in Hindi (Kaur, 2019). Most of these studies have given syntactic, semantic and pragmatic analysis of the languages and also provided samples in language affected ID populations. These research attempts have proved to be significant steps in providing efficient tools of SLPs in India. Attempts to develop assessment guidelines in some Indian languages, using different linguistic based approaches have been carried out which have influenced further positively. Several investigators have examined linguistic structure in Kannada (Bhat, 2002; Karanth, 1985; Kumaraswamy, 2021 Subbarao, 1995). Similarly, Karthikeyan (2003) in Tamil and Kaur (2019) in Hindi have shown that general and syntactic linguistic analysis is a significant step in providing efficient tools for SLPs in India.

The nature versus nurture explanation of language acquisition of the 1950's has been given rise to theories which support both views. It is generally accepted that language behaviour is best understood in natural communication contexts. The factors of maturation, continual reorganization of internal schemes and behaviour of society influence language acquisition (Bloom & Lahey, 1978; Carrow-Woolfolk & Lynch, 1982). This viewpoint has influenced the integrated view of language acquisition. In light of this approach, studying children in natural situations for examining their language use provides phonologic, syntactic and other aspects of critical linguistic data.

A specific approach using LARSP (Crystal et al., 1976 and 1989) principles has influenced the research on the description of the language of children with ID using Kannada (Kumaraswamy, 2021; Subbarao, 1995) and Hindi (Kaur, 2019). Using a similar approach, the present study focused on studying syntactic aspects

CWID having 4-6 years MA having Malayalam as their spoken language. MA matched TD children of 4-6 years (CA) have also been studied to compare syntactic outcomes.

LANGUAGE OF TD CHILDREN

In the present study 4-6-year-old Malayalam speaking children displayed a wide variety of rich syntactic aspects. This data provides the needed background to compare the language production of CWID with MA 4-6 years. TD children produced around 140-160 sentences with 2.2 to 2.7 sentences per turn whereas 5-6-year-old did show a generally better performance. Lower aged children had less average number of sentences compared to higher age group. This is likely to be the reflection of less inhibited interaction with adults. Overall, the quantitative measures like total number of sentences, mean number of sentences per turn and mean sentence length showed an increase in usage in higher age group.

Qualitative differences and variations were observed in syntactic aspects of Malayalam. For example, TD children in the 4-5 and 5-6-year group did not show differences in morphophonemic structure usage. All vowel combinations of Malayalam were acquired and consonant combinations were yet to be acquired. These observations correlate with Kannada and Hindi languages (Subbarao, 1995; Kaur, 2019).

TD children used plural markers using suffix /-kal/, /-mar/ and numeral suffix. Only the suffix /-ar/ was not seen by the majority of children. It can be said that regular markers were internalized and used, whereas irregular markers were minimally used. The present trends of these Malayalam speaking children are in agreement with Kannada and Hindi language studies. All regular tense markers were acquired and used by both age groups. Since the nature of data collection in the study included conversation with children the usage of present tense sentences was predominant.

The Malayalam PNG system was noticed to be well achieved in 4-6-year-old TD children. Second person plural /-niŋŋal/ and third person plural neutral /-ava, -iva/ were used predominantly by 5-6-year-old group. Malayalam speaking TD children appear to be using second and third person PNG markers more frequently than

previously reported. Language specific performance by TD children is an important factor in explaining differences between Dravidian languages in spoken form. Reduced usage of Second person markers is attributed to the nature of response required by the children during conversation.

Case markers were used frequently by TD children, predominantly nominative, locative and genitive markers. Results in general match the findings in Kannada speaking children. However, Kaur (2019) reported that Hindi speaking children of 5- 6 years frequently used possessive and objective case markers and the differences could be due to individual characteristics in Hindi language usage.

The present study indicated that by 4- 5 years of age all verb forms including causatives were acquired. Previous studies in Kannada and Hindi languages had indicated that causatives were yet to be acquired by 4- 6 years. Again, the specificity of language is thought to be important. A rich variety of sentence types were observed in TD children. Most frequently observed sentence types were declaratives, interrogatives, and possessive sentences. Conjunctions and quotatives were observed frequently. Comparatives e.g.: /-itilum nalla/ were not observed in the 4-5 years group. Few conditional clauses were observed particularly in the 5-6 years group. Participle constructions were observed in Malayalam language samples.

The results of the present study generally are in agreement with the studies of Kannada speaking children (Kumaraswamy, 2021; Prema, 1979; Sreedevi, 1976; Subbarao, 1995; Subramaniah, 1978; Suchitra & Karanth, 1993; Tasneem, 1972; Uma, 1993; Vijayalaxmi, 1981). Variations were found in the use of conditional clauses, participle constructions and tense forms. The usage of many sentence types was found frequently in the present study. It can be said that by 4-6 years, syntax development is well advanced. Malayalam sentence usage appears to be more complete compared to other studies in Kannada. Kumaraswamy (2021) has mentioned that compared to the study by Subbarao (1995), more sentence types such as reduplicated sentences and imperative sentences were observed in Kannada speaking children. The researcher had argued that developmental trends and data collection variables could be the reason for the improved sentence usage. Another reason in the present study could be language specificity and an advanced language learning

environment. It can be ascertained that research in other Dravidian languages is needed before data can be better understood.

The pattern and frequency of occurrences of structures found in 4-6 years of TD children is similar to adult language. Subbarao (1995) in an extensive study had reported that Kannada syntax usage in 4- 6-year-old TD children reflected adult usage of language. The variables that affect spoken Malayalam forms are urban versus rural, illiterate versus literate, educated versus uneducated, and caste hierarchy. Most of the children in the present study belonged to urban middle class families. Few studies in the Indian languages (Kumaraswamy, 2021; Subbarao, 1995; Vaidyanathan, 1988, Kaur, 2019) were also conducted in Urban middle class people. The patterns between these languages can be compared only after expertise future research. For example, imperative sentences were not used by 4-6-year-old TD children. It is possible that the data collection process did not provide sufficient opportunity for the child to use imperative sentences.

While summarizing development of syntax in children Crystal et al. (1976, 1989) made similar observations that by about 4-5 years, basic syntactic development is completed although learning continues. Stable patterns of word order, wide range of sentence structures compel us to believe that syntax development has largely taken place. High intelligibility of 4-6-year-old children's speech often masks many 'errors' which remain to be sorted out. Even in the present study the general impression one gets after studying 4- 6-year-old TD children is that language development has reached a level compared to adults, however, general achievements are yet to be made. This view is supported by the study by Karanth and Suchitra (1993) that beyond the age of 6 years, children start showing awareness of the grammaticality of their language. This ability grows slowly and progressively and even at the age of 10 years their sensitivity to grammatical judgment is not complete.

The decreased presence of recurrence and cessation could be attributed to the nature of sampling the language data in the present study in which children mainly responded rather than initiating communication. This could also reflect the cultural value of Indian society where asking adults to do something is not encouraged.

LANGUAGE OF CWID

CWID demonstrated an increased performance with increased MA. Higher MA (5-6 years) group produced more sentences per turn and longer sentence length than the lower MA (4-5 years) group. Thus, language performance can be predicted based on what is known about syntax at between 4 and 6 years. It was generally noted that the CWID group produced few spontaneous sentences, i.e., sentences other than what the adult stimuli required. This suggests the possibility that CWID have limitations in the cognitive processing of linguistic input which may occur at the point of decoding, encoding or both. Such difficulties in accessing or recalling information and availability of stored information have been noted previously in the ID population (Gerjuoy & Winters, 1970 cited in Kiernan, 1985; Kaur 2019; Kiernan, 1985; Kumaraswamy, 2021; Subbarao, 1995; Winters & Brzoska, 1976). In general, quantitative data analyzed from the conversations with CWID confirm the results of western studies (Chapman et al., 1998; Price et al., 2008) and a few Indian studies (Kaur, 2019; Kumaraswamy, 2021; Subbarao, 1995). CWID showed delayed development of syntax and uneven performance compared to MA matched TD children. Hence individual linguistic profiling of children is important, particularly for the purpose of defining intervention goals and establishing appropriate treatment strategies.

Syntax proved to be a difficult part of language performance in CWID. Many morphophonemic aspects were not acquired (e.g., consonant combinations) by an even higher the MA group. Findings in previous studies in Malayalam (Gupta et al., 2019) and a western study (Fowler, 1994) confirmed that morphophonemic feature development is not complete by 4-6 years of MA.

Plural markers /-kal/, /-mar/ and numeral suffix were frequently observed in both groups. It is observed that plural markers /-ar/ are not well developed in both groups. This observation confirms a previous study in Malayalam (Radhika & Kumaraswamy, 2010). Consistency of these observations was also noticed in Kannada speaking children (Subbarao, 1995; Kumaraswamy, 2021). Hindi speaking children of similar age groups have shown a wider and frequent use of plural markers (Kaur, 2019). Some similarity of plural development is observed in Dravidian languages.

Predominance of sentences in present tense may be consequent to the nature of the data collection, where play and spontaneous 'here and now' conversations were encouraged. This observation was noted in a previous study in Kannada speaking children and in a study in Hindi speaking children with a comparable sample (Subbarao, 1995; Kaur, 2019). In the present study past and future tense sentences were also seen in the majority of children, although less frequently. Language learning appears to be a dynamic process in the CWID group and training at special schools may impact the acquisition of present tense.

A wide variety of PNG marker usage is observed in CWID. Lower MA group used first person, second person and third person singular markers. As expected, second person plural (/-niŋŋal/) was difficult for a majority of the children, whereas in the higher MA group almost all children showed the usage of PNG markers; a similar observation was noted for third person plural marker. The Malayalam PNG system appears to be well developed in CWID by 5-6 years MA. Studies in Kannada (Subbarao, 1995; Kumaraswamy, 2021) and Hindi (Kaur, 2019) showed a much less developed PNG system. It is possible that school training emphasizes first person markers. Lack of spontaneous responses and communication imitations could also affect PNG use. A previous study by Priyanka and Kumaraswamy (2017) in Malayalam also confirms the observations of the present study.

Case markers were found to be less developed in CWID even in the higher MA group. Nominative and genitive case markers were observed frequently. Kannada speaking children with a MA of 4-6 years used accusative case markers frequently (Subbarao, 1995). It was interesting to note that higher MA (5-6 years) children did not show any significant difference in case marker usage. A study by Mohan and Kumaraswamy (2015) showed that Malayalam speaking CWID reported similar results. The Hindi speaking CWID, however, showed a well-developed case system (Kaur, 2019). Languages appear to present different levels of difficulty to CWID in using the case system.

Transitives and intransitive verbs were used equally by CWID groups. Causative forms were used less by CWID groups. This is likely the result of causative forms used less frequently in spoken Malayalam. A similar observation was made in Kannada (Mallikarjuna, 1994, quoted by Subbarao, 1995).

A variety of Malayalam sentence types were seen in CWID groups with comparable performance. Wh questions, adjectival use, declaratives were seen in all children. Interrogative sentence usage increased in the higher MA group indicating its developing nature. Kannada speaking children showed a very similar presence of sentence types (Subbarao, 1995). Hindi speaking CWID showed only simple and affirmative sentences (Kaur, 2019). A similarity between sister languages Malayalam and Kannada can be observed. Generally, no complex sentence usage was observed. Western studies (Frizelle et al., 2018) have shown that children with DS showed difficulties in understanding complex sentences compared to control groups matched for MA and have reported that frequently shorter sentences were used as the children failed to acquire complex grammatical constructions. Conjunctions and conditional clauses were poorly displayed by CWID.

CWID showed an inability to shift quickly to the next stimuli and continued to persist answering the previous stimuli. This was particularly observed while using quotatives. In general, even though syntactic structures were used, they were simple. Many instances of starting a sentence and not completing it were seen, probably reflecting difficulties in recalling words.

Children also substituted pronominal words /itu/ (this), /atu/ (that) for the names of items or actions during description. Again, these samples reflect insufficient vocabulary or difficulties in retrieving words from storage. Some inappropriate use of verbs was also observed.

In general, simple statements, negations and possessive sentences predominate sentence structures. In general, the less frequent use of sentence types like reduplicated, tag, and embedded likely mirrors general Malayalam language usage.

Varied performance in the CWID group does indicate that there may not be a typical pattern for the language of CWID. This observation is supported by previous observations (Carrow-Woolfolk & Lynch, 1982; Kaur, 2019; Kumaraswamy, 2021; Subbarao, 1995). There is a growing body of research investigating the language performance of CWID in natural settings. Comparing the present study in Malayalam (4- 6 years of MA) and previous study in Kannada (Subbarao, 1995; Kumaraswamy, 2021), there is a general consensus of pattern similarity between Dravidian languages.

Contrastingly, Hindi language descriptions (Kaur, 2019) show differences in sentence types, case markers, PNG system etc.

The lack of studies on syntactic development across Indian languages is a major disadvantage in understanding when language structures are acquired and how they are used, including Malayalam language. This makes it difficult for the development of both assessment and treatment processes. Traditionally the 'speech' of the CWID has been targeted for training rather than their 'language'. This view severely limits the nature of the assessment done and consequently the identified interventions to be implemented. CWID, like most other children, are exposed to at least two languages, further complicating the nature of the language environment. Recognizing the importance of the bilingual nature of Indians is yet to be considered in language development /assessment studies. Further, most schools/ parents focus on English as the medium of therapy or as the general background for assessment. Since exposure to English as a medium for school communication takes place after 4-5 years, this poses additional problems for researchers.

A lack of understanding of the language structures developing in the preschool and early school years have limited the growth in assessment and remediation of language deficiencies for CWID. Having a lack of qualified SLPs working in this area is also a strong concern. The present study is an attempt to bridge these lacunae. In the next section, a brief language sample of one CWID is provided along with the analysis and setting up of goals for remediation on the basis of language analysis.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Description of the language behavior of children with disabilities is an essential step towards building tools for assessment and language intervention. The LARSP procedure (Crystal et al., 1976 and 1989) has been used with English speaking children successfully. The procedure provides guidelines for eliciting natural language samples in conversation between adults and children, rules of transcription and analysis. The LARSP procedure has been adapted successfully to describe the language of CWID in Kannada (Kumaraswamy, 2021; Subbarao, 1995). The present study followed a similar methodology and described language (in terms of syntax skills) of Malayalam speaking CWID. The objectives of the study were:

1. Analyzing their expression data at the syntactic level as compared to MA matched TD children
2. Comparing the two groups CWID with two different MA ranges of 4-5 years and 5-6 years for determining age related changes.

The study obtained natural conversational samples of TD children of 4-6 years and MA matched CWID. These samples were transcribed and analyzed at syntactic levels. The description of Malayalam spoken syntactic structures was obtained from two sources, namely Grammar of Malayalam (Nair, 2012) and Malayalam - Descriptive Grammars (Asher, & Kumari, 1997).

In all, 20 TD children (4-6 years) and 60 CWID (4-6 years MA) were studied. Sample was divided into 4-5 year and 5-6year age ranges. The chronological age range of CWID was 8-14 years. All children spoke Malayalam as their major language and were from urban middle class families in the Trivandrum, Pathanamthitta, and Eranakulam districts. A conversational sample with all the subjects was tape recorded during interactions in play situations, using a similar sequence of games and conversation for about 30 minutes. Only one pupil/child (P) was present with the investigator/ therapist (T). The sample obtained was transcribed and subjected to analysis based on guidelines provided by Subbarao (1995) who did a

comprehensive language analysis of Kannada speaking CWID using the overall guidelines provided by LARSP (Crystal et al., 1976, 1989). A total of 13 scans were made on the transcriptions to obtain quantitative and qualitative data.

The quantitative data included 3 measures - total number of sentences, mean number of sentences per turn, and mean sentence length. The qualitative information included syntactic aspects (morphophonemic structures, plurals, tenses, PNG markers, case markers, verb forms, sentence types, conjunctions quotatives and comparatives, conditional clauses, and participle constructions). For each aspect, presence or absence of structures selected was noted and the measure of the number of children showing the presence of each of the structures was calculated. The summary of major findings of the study are given below:

Along with the overall delay in the development of syntax skills there are differences among the MA matched TD children and CWID. A wide range of performance was seen in the quantitative data. TD children Group II (5 to 6 years) showed significant differences in performance when compared to TD children Group I (4-5 years) across all the three quantitative measures. A comparison of the two MA groups, among the CWID shows that the difference between the two age groups is also statistically significant. This indicates that the CWID group with an MA of 5-6 years scored significantly higher values compared to the 4-5 years MA group. These results indicate that both TD and CWID differ in their syntactic development based on age and whether or not an ID exists. On the quantitative measures, TD children of 4-5 years did not differ significantly from 5-6-year-old children. Significant differences were seen between TD children and MA matched CWID. The response patterns of TD children and CWID varied in many syntactic aspects. For example, spontaneous sentences occurred less in CWID as compared to TD children. Such pattern analysis is important to interpret qualitative data.

Generally, the responses of CWID showed less use of spontaneous sentences, predominant single word elliptical responses, higher no responses and the need for a larger number of questions to elicit responses. Attempts at telling a story or narrating incidents were restricted in CWID, reflecting their inability to use certain aspects of language, such as, connecting words. Instances of CWID not completing a sentence were observed frequently, probably reflecting their

difficulties in recalling words. Results on syntactic analysis presented a varied picture for both groups of children. On the whole, MA matched CWID did more poorly than TD children. An overall delay in development of syntax was clearly seen. Morphophonemic structures like consonant + consonant combinations were not seen in either age groups of CWID. Except regular plural markers, other plural markers (e.g., Suffix/-ar and /-mar//) were not well developed in either groups of CWID. The present tense marker was used by a large number of children in both groups. Other tense markers like past and future marker were also used but less frequently. Except for second person markers other PNG markers like first person, second person and third person singular were seen frequently in both groups of children. First person and third person markers predominate in the samples probably due to the nature of data collection using spontaneous play and conversation, where 'P' mainly responded to T's stimuli. Case markers were generally difficult for CWID. However, nominative and genitive case markers were observed frequently in both groups of CWID. Transitive and intransitive verb forms were used equally by both groups of subjects. Only the causative verb form was seen less frequently in both groups of CWID. They generally used simple sentences. Frequently seen sentence types included Wh' questions, adjectival use, possessions, declaratives. An increase in interrogative sentences was seen in the higher MA group. Tag questions, reduplicated, imperative, and embedded were seen less frequently. TD children produced more varied sentence types. Conjunctions, comparatives and quotatives, conditional clauses were rarely used by both groups. Participle constructions were used less frequently by CWID. TD children did show some evidence of using some of these syntactic aspects. CWID produced several sentences which could be classified as different with inappropriate usage of grammatical markers, such as PNG markers and adjectival words.

Hence, it is possible to plan meaningful and specific intervention programmes for CWID based on the analysis of their syntax skills, as demonstrated in the present study. This methodology used at regular intervals will be helpful in measuring the progress and planning of future programmes.

CONTRIBUTIONS OF THE CURRENT STUDY

This study provides a grammar database to understand the performance on syntax skills in Malayalam language, across age levels among TD children (4-6 years) and CWID (MA 4-6 years and in depth understanding of the performance of CWID on 10 parameters of syntax leading to a systematic therapeutic intervention which also indirectly influences the quality of life in these children. The detailed description of syntax skills in CWID provides a reliable base line to assist speech language pathologists in better assessment & diagnosis, remediation and also in monitoring the progress of therapy in both special schools and speech therapy centers.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Malayalam is a Dravidian language with a variety of dialects across all districts in Kerala. The present study included Malayalam speaking TD children from three districts namely Trivandrum, Pathanamthitta and Eranakulam. Further studies are needed to assess children from the rest of the districts in Kerala. Research can also include bilingual children in future.

CWID was assessed within the previous year by a trained psychologist and the mental estimates were available in school records. A reassessment of their current MA was not done because of the lack of resources. This is a limitation of the current study.

Study focused on analysis of syntax skills in Malayalam language. The phonologic, semantic and pragmatic aspects can be included in the future study.

Future research needs to include study of other age ranges, micro profiling of different aspects of language, comparison of the method used in the present study with other types of sampling such as using a language test.

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APPENDIX - 1

A COMPREHENSIVE SYNTAX ANALYSIS OF LANGUAGE IN CWID

NAME: Age/Gender: Others:

_____

LANGUAGE SCANS/ANALYSES (MALAYALAM)

_____

SCAN 1. UNANALYSED PROBLEMATIC

1.Unintel. 2.Symbol. Noise 3. Deviant 1. Incomplete 2. Ambiguous

_____

SCAN 2. RESPONSES_____

Normal Response Abnormal

_____

Major _____

Ellip. _____

Stimulus Type

Total Repetitions 1 2 3+ Full

Minor Structural

Zero Problems

_____

Quest.| | |

Others| | |

SPONTANEOUS| | OTHERS:

SCAN 3. MINOR Social Stereotypes Problems

QUANTITATIVE INFORMATION

Total no. of Sentences	Mean No. Sentences Per Turn	Mean Sentence Length

Analysis of Syntactic structures from Scan 4 to 13

Scan- 4: Morphophonemic structures:

Morphophonemic structures or sandhi denotes the changes which are occurring in sounds when two words or separate morphemes come together resulting in a new word. Sounds are substituted, deleted or inserted or rearranged. In Malayalam language, most noticeable morphophonemic structures are:

i. Combination of vowel+vowel sandhi
ii. Combination of vowel + consonant sandhi
iii. Combination of consonant +consonant sandhi

i. Combination of vowel + vowel sandhi

a. /- a+a and a+aa/

/-a+a/

Example: /itu vaḷayaḷḷa/ 'This is not a bangle'

/-a+aa/

Example: / itu vaḷayyaanu/'This is bangle '

b. /-i+a and i+aa/

/-i+a/

Example: /kiḷiyalla/ 'This is not a bird'

/-i+aa/

Example: /kiḷiyaaṇu/ 'This is a bird'

/-i+i and i+u/

/-i+i/

Example: /eliyilla / 'a rat is not here

/-i+u/

Example: /eliyuntu/ 'a rat is here

c. /- a+i/

Example: / valiyil a◌ṇa ira◌ŋ◌◌i / 'an elephant has come to the path

d. /-a+e/

Example: /kuṭṭi◌ṇi vala eṭukkunnu 'the child is picking the bangle

e. /- a+u/

Example: /:kaaḳḳayuntu/ there is a crow

f. /- i+e/

Example: /peenayeṭuḳḳunnu/ ‘picking the pen

ii. Combination of vowel + consonant sandhi

Example:/patiṭ+keṭṭu/ = /patiṭkeṭṭu/ ‘staircase

iii. Combination of consonant + consonant sandhi

Example: /kaal+paaṭu/= kaalppaṭŭ ‘foot print

Scan 5: Plurals:

Malayalam nouns show singular- plural distinction. /–kaḷ/ and /–maaṛ/ are the plural suffixes of Malayalam. The distribution of two suffixes is as follows

Inanimate count nouns, both concrete and abstract, use the plural suffix –kal

Example: / kuṭa/ -/kuṭakaḷ/ ‘umbrella’- umbrellas

Animate human nouns and animate non-human sounds take the suffix /–maar/ when they have gender suffixes (or when the noun is Gender without suffix as in /amma/ ‘Mother’), and –kaḷ otherwise

Example: /amma/ - /ammamaaṛ ‘mother’ -‘mothers’

The plural suffix /–aṛ/ which is used with a limited number of nouns does not indicate gender

Example: /śiṣyaṛ/ ‘disciples

The plural suffix is deleted when preceded by numeral adjectives

Examples: /naalu ruupa/ four rupees

Scan 6: Tenses:

Past, present and future tenses are morphologically distinct in Malayalam; but , the same tense form may be used to refer to more than one time period. The present and future tense forms especially, do not correspond strictly to present and future time.

i.Past tense

ii. Present tense

iii.Future tense

i.Past tense- it denotes the time -passed without any distinction between remote past and recent past.

Example: /ravi eluti/ ‘Ravi wrote’

ii. Present tense is used in the following situations:

With performative verbs to denote oats declarations announcements etc.

Example: /ñaan satyam ceyyunnu/ ‘I swear’

To denote ongoing actions

Example: / mala peyyunnu / ‘It is raining ‘

To denote universal time

Example: /suuryan kilakku udikkunnu/ ‘The sun rises in the east’

iii. Future tense it conveys predictions and habitual actions

Predictions

Example: /naale mala peyyum/ ‘It will rain tomorrow’

Habitual actions

Example : /avan raatṛi vayaṛ niṛaccu uṇṇum/ ‘He will eat full at night’

Scan 7: PNG markers

The verb in Malayalam is not marked for number and gender ((Nair, R.S 2012). As the verb does not take number and gender terminations in Malayalam, gender marking of nouns is not a grammatically relevant feature. The suffix / –an /marks masculine gender and the suffix /–i/, feminine gender.

Example: /kaḷḷan/, / kaḷḷi/ ‘Thief’

Variant gender suffixes are seen in a limited set of nouns such as:

/ aniyatti/ ‘Younger sister’

Person markers of Malayalam are changed as per semantic needs.

Examples of I person are:

I person singular /ñaan/ I

I person plural /ñaŋŋal/naam/nammaḷ/ we

Examples of II person are:

II person singular / nii/ 'You (used for addressees of lower status, lesser in age or who are in close terms)

II person plural /niŋŋal/ 'You (polite form)

Examples of III person are:

III person singular male /avan/ivan/ 'He

III-person singular female /aval, ivaḷ/ 'She

III-person singular neutral /atu/itu/ 'It

III-person plural /avaṛ/ivaṛ/ 'They (polite form)

III person plural neutral /ava/iva/ 'It

Scan 8: Case markers (case system)

Malayalam follows the system of marking grammatical relations and semantic roles through a set of case suffixes, a feature common to the Dravidian languages. As roles and relations are conveyed through suffixes, word order changes do not normally alter sentence meaning in Malayalam.

The case system of Malayalam includes 7 cases:

i. Nominative- The nominative noun denotes the subject of the sentence

Example: /ravi e<u>l</u>uti/ 'Ravi wrote'

ii. Accusative marks the object of the sentence /-e/

Example: /nivi tattaye piṭiccu/ 'Nivi caught a parrot'

iii. Dative - The dative case noun can stand as either subject or object. In sentences where there is no nominative noun, the dative function as a subject. /-ku, -nu/

Example: /satiykkŭ peṭṭannu deeṣyam varum/ 'Sati gets angry easily'

iv. Sociative- The Sociative is grammatically similar to accusative but semantically different. Like the accusative, the Sociative also marks the objective./-oṭu/

Example: /vi<u>n</u>ay citṛayooṭu aa vaaṛtta paraññu/ 'Vinay told that news to chitra'

v. Instrumental suffix /-aal/ denotes inanimate objects used by the subject to perform an action. (-aal)

Example: /avaṛ aan̲aye vaṭattaal ban̲dhiccu/ ‘They tied the elephant with a rope’

vi. Locative case denotes spatial and temporal meaning (-il)

Example: /kuṭṭikaḷ bassil kayaṛunn̲u/ ‘The children are boarding the bus.

vii. Genitive case denotes possession /-n̲ṛe, -uṭe/

Example: /en̲ṛe pen̲a/ ‘My pen’

/an̲aghayuṭe maala/ ‘Anagha’s chain’

Scan 9: Transitives, Intransitives and Causatives

Descriptive grammar series of Malayalam describes and distinguish three types/ kind of Verbs namely, transitive, intransitive and causative verbs.

Transitives

Examples:

/ ravi caar vaaŋiccu/ ‘Ravi bought a car

/aval keekku muṛiccu/ ‘She cut the cake

/ avan dosa tinnu / ‘He ate dosa

Intransitives

Examples:

/kutti cirikkun̲n̲u / ‘Child is smiling

/avan uranni / ‘He slept

/avar natannu/ ‘They walked

Causatives

Examples:

i. /-iccu/ causative (past)

/amma kuññine kalippiccŭ/ ‘mother made the child play

ii. /-unnu/ causative (present)

/amma kuññine kalippikkunnu/ ‘mother makes the child play

iii. /-kkum/ causative (future)

/amma kuññine kalippikkum/ ‘mother will make the child play

Scan 10: Sentence types

Sentences in Malayalam are classified into:

i. Interrogative Neutral yes-No questions /-oo/

Example: /niŋŋal iṉṉu skuuḷil pooyoo/ /did you go to school today?)

ii. Question word questions: Who question/ (– entu (what),-eetu (which), -eṉṉu (when),-eviṭe (where)/.

iii. Interrogative tag /-unto, alle , ille/

Example: /itu peena, alle/ ‘This is pen, isn’t it?

iv. Adjectival use

Example: /ñaan oru putiya pustakam vaaŋŋiccu/ ‘I bought a new book

v. Declarative sentences

Example: /atu ravi/ ‘That is ravi

/itu palaya pustakamaanu/ ‘This is an old book

vi. Negation /-illa, alla/

Example: / keeralattil mala aanu / ‘it’s raining in Kerala)

/keeralattil mala alla / ‘it’s not raining in Kerala)

vii. Affirmative sentences

Example: /saam naṉṉai paaṭum/ ‘Sam sings well

viii. Quotatives/ reportives /-eṉṉu/

Example: maasേu vannu eṉṉu kuṭṭi paraññu (student said that teacher came)

ix. Imperative sentences :

Example: / nii poo/ ‘you go

/nii vaa/ ‘you come

/ niŋŋal varoo/ ‘You (pl.) come

/ini aval pokkooṭṭe/ ‘Let her go now (giving permission)

x. Reduplicated sentences

Example: /mummunnai/ ‘threes

/onnonnai/ ‘one by one

xi. Possessive sentences

Example: /avaluṭe peena/ ‘her pen

xii. Reflexive sentences /-tanne/

Example: /avan avanettanne muṛiveelppiccu/ ‘he injured himself

Scan 11: Conjunctions Comparatives and Quotatives

Conjunctions used in Malayalam is /–um/

Example: /nivium vinium/ ‘Nivi and Vini

There are no morphological comparative and superlative forms of adjectives. Comparative and superlative structures do nevertheless occur within noun phrases. In the case of comparative structure, it is a condition of its occurrence that the object of the comparison must be expressed, since without this there is no comparative structure.

Examples: /itilum nalla pustakam/ ‘A book better than this

/eeṛṛavum nalla pustakam itaaṇu/ ‘the best book is this

Reportive speech in Malayalam is usually marked by the Quotative participle / -ennu/

Example: /ravi varaam ennu paraññu ‘ Ravi said he will come ‘

Scan 12: Conditional clauses

A number of ways of stating a condition can occur.

i. A commonly used form consists of the suffix /–aal/ added to the past tense stem.

Example / avan vannaal parayanam/ ‘If he comes, I shall tell him’

ii. Another commonly used form has /– eŋkil/

Example: /nii atŭ ceyyumeŋkil ñaanum varaam/ If you will do, I will come

Iii.unfulfilled conditions are commonly expressed with complex verb forms + /-eŋkil/

Example : /ma̲la peytirunneŋkil ñaan purathu pookillaayiru̲n̲u/‘If it had rained, I should not have gone out’

Scan 13: Participle constructions: 2 types

i. Relative participle construction

a. Present participle

Example: /meśa uḷḷa muṛi/ ‘a room with a table

b. Negative participle

Example: /meśayiḷḷatta muṛi/ a room without a table

ii. Verbal participle construction

Example: kuṭṭikal varivariyaai pooku̲n̲u children going in a single file

kuṭṭikal kooṭṭamai pooku̲n̲u children going in a group

APPENDIX - II

Summary presentation of the Malayalam Syntax structures

Syntax structures	Age range	70% and above(70-TD	70% and Above CWID	30% to 70% TD	30% to 70% CWID	30% or less TD	30% or less CWID
Scan 4: Morphophonemic structures	4-5 years	Vowel+vowel combination (a+a &a+aa) Vowel+vowel combination (i+a &i+aa) Vowel + vowel combination (i+i &i+u) Vowel+vowel combination (a+i) Vowel + vowel combination (a+u) Vowel+ vowel combination (a+e) Vowel + vowel combination(i+e)	Vowel + vowel combination l (i+i &i+u) Vowel + vowel combination (a+u) Vowel + vowel combination(i+e)		Vowel+vowel combination (a+a &a+aa) Vowel+vowel combination (i+a &i+aa) Vowel+vowel combination (a+i) Vowel+ vowel combination (a+e)	Vowel+consonant combination Consonant +consonant combination	Vowel+ vowel combination Consonant +consonant combination
	5 -6 years	Vowel+vowel combination (a+a &a+aa) Vowel+vowel combination (i+a &i+aa) Vowel + vowel combination (i+i &i+u) Vowel+vowel combination (a+i)	Vowel+vowel combination (a+a &a+aa) Vowel+vowel combination (i+a &i+aa)	Vowel+ vowel combination Consonant +consonant combination	Vowel+vowel combination (a+i)		Vowel+consonant combination Consonant +consonant combination

		Vowel + vowel combination (a+u) Vowel+ vowel combination (a+e) Vowel + vowel combination(i+e)	Vowel + vowel combination l (i+i &i+u) Vowel + vowel combination (a+u) Vowel+ vowel combination (a+e) Vowel + vowel combination(i+e)				
Scan 5: Plurals	4-5 years	Suffix –kal Numeral suffix	Suffix-kal Numeral suffix	Suffix-mar	Suffix- mar	Suffix-ar	Suffix-ar
	5-6 years	Suffix-kal Suffix –mar Numeral suffix	Suffix –kal Numeral suffix	Suffix -ar	Suffix-mar		Suffix-ar
Scan 6: Tenses	4-5 years	Past Present Future	Present Past future				
	5 -6 years	Past Present Future	Present Past future				
Scan 7 : PNG markers	4-5 years	First person singular First person plural Second person singular Third person male Third person female Third person singular neutral Third person plural	First person singular First person plural Second person singular Third person singular male Third person singular female Third person neutral	Second person plural	Second person plural Third person plural	Third person plural neutral	Third person plural neutral

	5-6 years	First person singular First person plural Second person singular Second person plural Third person male Third person female Third person singular neutral Third person plural Third person plural neutral	First person singular First person plural Second person singular Second person plural Third person male Third person female Third person singular neutral Third person plural		Third person plural neutral		
Can 8: Case markers	4-5 years	Nominative Accusative-e Dative-ku,nu Sociative-otu Instrumental-aal Locative-il Genitive-ute,nte	Nominative Dative-ku,nu		Accusative-e Sociative-out Instrumental –aal Locative-il Genitive-ute,nte		
	5 -6 years	Nominative Accusative-e Dative-ku,nu Sociative-out Instrumental-aal Locative-il Genitive-ute,nte					
Scan 9 :transitives Intransitives Causatives	4-5 years	Transitives	Transitives				
		Intransitives	Intransitives				
		Causatives			Causatives		

	5-6 years	Transitives	Transitives				
		Intransitives	Intransitives				
		Causatives			Causatives		
Scan 10: sentence types	4-5 years	Interrogative Y/N Who question Adjectival use Declaratives Negation Quotatives Reduplicated Possessive	Who question Adjectival use Declaratives Negation Possession	Interrogative tag Affirmative sentences Reflexive sentences	Interrogative tag Affirmative sentences Quotatives Reduplicated sentences	Imperatives	Interrogative Y/N Imperative sentences Reflexive sentences
	5 -6 years	Interrogative Y/N Who question Interrogative tag Adjectival use Declaratives Negation Affirmative sentences Quotatives Reduplicated Possession	Who question Interrogative tag Adjectival use Declaratives Negation Affirmative sentences Possession	Reflexive	Quotatives Reduplicated	Imperatives	Interrogative Y/N Imperatives Reflexive s
Scan 11: Conjunctions Comparatives Quotatives	4-5 years	Conjunction –um			Conjunction-um		
						Comparative itilum nalla Comparative eeṛṛavum	Comparative-itilum nalla Comparative -eeṛṛavum

		Quotative-ennu			Quotative -eenu		
	5-6 years	Conjunction-um			Conjunction-um		
		Comparative-eerraavum		Comparative-itilum nalla			Comparative-itilum nalla Comparative -eeṛṛavum
		Quotatives-ennu			Quotatives-ennu		
Scan 12: conditional clauses	4-5 years	Conditional clause-aal			Conditional clause -aal	Conditional clause-eŋkil Unfulfilled conditional clause-eŋkil+ complex form	Conditional clause-eŋkil Unfulfilled conditional clause-eŋkil+ complex form
	5-6 years	Conditional clause-aal Conditional clause- eŋkil		Unfulfilled conditional clause-eŋkil+ complex form	Conditional clause-aal		Conditional clause-eŋkil Unfulfilled conditional clause-eŋkil+ complex form
Scan 13: participle constructions	4-5 years	Relative- present Relative negative Verbal			Relative- present Relative negative Verbal		
	5 -6 years	Relative- present Relative negative Verbal			Relative- present Relative negative Verbal		

APPENDIX - III

Portions of transcript of the conversational sample of a Child with Intellectual Disability

Child DP Chronological age (CA):14 yrs/F, Mental age (MA): 5.11 yrs

	UTTERANCES	TRANSLATION
T	/mooḷte peerenta? /	**What is your name?**
C	/deepaa/	**Deepa**
T	/viṭeviṭeyaa? /	**Where are you coming from?**
C	/vaṭṭapaara /	**Vattappara**
T	/divasavum eŋane skuuḷil varunnatu? /	**How are you coming to school daily?**
C	/bus/	**Bus**
T	/bassil/	**In the bus**
C	/bassil/	**In the bus**
T	/aarൂuṭe kooṭe varum? /	**With whom are you coming?**
C	/ammaṭe kooṭe/	**Along with amma**
T	/nere irikku, ottakku bassil vannitṭuṇto? /	**Sit properly.** **Have you ever come alone in bus?**
C	/illa/	**No**
T	/tikkaṛṛinu aaṛu kaasú koṭukkum? /	**Who will pay money for your tickets?**
C	/pass.... untu/	**Have pass**
T	/viitṭiḷ aarokkeyuṇṭu? /	**Who all are there in your house?**
C	/accan....amma ...ceecci/	**Father, mother , sister**
T	/accanṛe peerenta? /	**What is your father's name?**
C	**/rajeesh /**	**Rajesh**
T	/ammayuṭe peerenta? /	**What is your mother's name?**
C	/meera/	**Meera**
T	/ceecci uṭe peerenta? /	**What is your sister's name?**
C	/aasά/	
T	/viitṭil appooppanum ammoommayum unto? /	**Do you have grandmother and grandfather at home**

C	/illa/	
T	/ceecci eviṭe paṭhikkunnu? /	**Where is sister studying?**
C	/doore/	
T	/nere irikku, kaikal meeśayil vakku, itu enta? /	**Sit properly,** **Keep your hands on the table?** **What is this?** **showed doll and placed on the table**
C	/haay.....paava/	**Hai, doll starts playing with it**
T	/paavaye iṣṭappeṭṭo? /	**Do you like the doll?**
C	/iṣṭṭaayi/	**Liked**
T	/paavayuṭe peeṛu enta? /	**What is her name?**
C	/dooṛa/	**Dora**
T	/dooṛa aaraa? /	**Who is Dora?**
C	/kaartooṇil ullata/	**Is in Cartoon**
T	/viiṭṭiḷ ṭiivi unto? /	**Do you have TV at home?**
C	/untu/	**Yes**
T	/entu kaanaanaṇu iṣtam? /	**What do you like to watch in TV?**
C	/kaarṭooṇ.....Sinima/	**Cartoon, cinema**
T	/eetu kaarṭoon kaaṇum? /	**Tell me which all cartoons do you watch?**
C	/dooṛa.....baalaveer.....yooko/	**Dora, Baalaveer, Yoko**
T	/itu enta? /	**What is this? shows a comb**
C	/ceeppu/	**Comb**
T	/ceeppu eviṭe vaccu? /	**Where is comb placed now?**
C	/meeśa/	**table**
T	/aṭiyil aano? /	**Is it under?**
C	/aḷḷa.....meeśayil/	**On the table**
T	/dooṛa uṭe muṭi eŋane ceekum ennu kaaṇikkamo? /	**Can you show me how will u comb Dora's hair**
C	/kaaṇikkaam/	**Yes will do ....started combing hair**
T	/mooḷte muṭi aaṛu keṭṭum? /	**Who will tie hair for you?**
C	/ñaan....keṭṭum/	**I will tie**

T	/aanṛi paavaye entu ceytu/	**What did aunt do with doll?**
C	/paavaye.....aṭiccu/	**Slapped doll**
T	/ippooḷ paavaye entu ceytu/	**Now what is aunt doing with doll?**
C	/uṛakkunnu/	**Making sleep**
T	/itu enta? /	**What is this? shows mirror**
C	/kaṇṇaaṭi/	**Took mirror and smiles at mirror..**
T	/dooṛaye kaṇṇaaṭiyil kaaṇikku? /	**Show Dora to mirror?**
C	/śaṛi/	**OK**
T	/itaa, eṭuttoo?	**Removed the doll from the table. Gave tangible reinforcement**
C	/taankyoo aanṛi/	**Thank you aunty**
T	/itu enta? /	**What is this? Gave colouring book and crayons**
C	/kaḷḷaṛ/	**Colours ....Continues drawing**
T	/eetokke kaḷḷaṛukaḷ untu/	**Tell the colours**
C	/pacca...niila....manja...veḷḷa…..karuppu.../	**Green, blue, yellow, white, black**
T	/itu nookku/	**Look at this**
C	/kiḷi...maram… aakaaśam...ila/	**Bird, tree, sky ,leaf**
T	/ito? /	**And this?**
C	/veeṭu.... rooṭu/	**House, road**
T	/etṛa pakṣikal untu? /	**How many birds are there in this picture**
C	/onnu,.....rantu..... ,moonnu.....naalu/	**One, two, three, four,**
T	/pakṣiyuṭe peeru enta? /	**What is the name of that bird?**
C	/tatta/	**Parrot**
T	/taṭṭakku eetu kaḷḷar koṭukkum? /	**Which colour will you use to colour parrot?**
C	/pacca/	**Green**
T	/cuntinoo? /	**And for beaks?**
C	/cuvappu/	**Red**
T	/tattaye kantiṭṭunṭo? /	**Have you seen parrot?**
C	/aah...marattil kaṇtiṭṭuṇtu/	**Yes, saw in tree**
T	/tatta eviṭe irikkunnu? /	**Where is parrot sitting?**

C	/maraṯṯil /	**On the tree**
T	/oru tatta, orupaaṭu? /	**One parrot, many? What will you say**
C	/ orupaaṭu .....tatta/	**Many Parrot**
T	/naḷḷa maaḷa aaru vaaŋitannu? /	**Hi, nice chain.** **Who brought it?**
C	/amma.....vaaŋi tannu/	**Amma bought**
T	/ito? /	**And this?**
C	/aanṛiiṭe.....maala/	**Aunt's chain**
T	/itu enta? /	**What is this ?Showed the alarm clock**
C	/vaaccu/	**Watch**
T	/itu vaaccu aaṇoo? alla, kaiyyil keṭṭiyataanu vaachu/	**Is it watch, no,** **Watch is tied on your hand**
C	/alla.....alaaṛam/	**No ...alarm**
T	/miṭukki, alaaṛam veccaano raavile eluṉṉekkuṉṉatu?/	**Good girl.** **Do you use alarm to wake up in the morning**
C	/illa/	**No**
T	/pinne/	**Then?**
C	/ente.....amma..... viḷikkum/	**Amma will wake me up**
T	/skuuḷinte peerenta? /	**What is the name of your school?**
C	/śaalom/	**Shalom**
T	/kḷaas tiiccaṛ aara? /	**Who is your class teacher?**
C	/biina tiiccar/	**Beena teacher**
T	/kḷaas ṭiiccar kḷaassil entu ceyyum?/	**What will teacher do in the class?**
C	/paṭhippikkum/	**Will teach**
T	/etṛa kooṭṭukaar untu? /	**How many friends do you have?** **Gave jigsaw puzzles of animals and birds**
C	/onnu....raṉtu ....moonnu....naalu....anju/	**One, two, three, four, five**
T	/entu kaḷikkum? /	**What all games will you play?**

C	/panṭukaḷi.....pinne.....oḷiccukaḷi,...../	**Ball game ,hide and seek,**
T	/aaṛaa eppo<u>l</u>um jayikku<u>nn</u>atu/	**Who will win always?**
C	/deevi...jayikkum/	**Devi will win**
T	/vaikiṭṭu viiṭṭil e<u>n</u>tu ceyyum? /	**What will you do at home in the evening?**
C	Hmmm/	**Hmmmm(no answer, just sighs)**
T	/miṭukki, parayu? /	**Good girl, tell me?**
C	/kaḷikkum.....pinne.....kaḷikkum.....uraŋum/	**Will play, eat sleep**
T	/viiṭṭil raatṛi pṛaaṛthikkumo? /	**Do you pray at night at home?**
C	/aah/	**Yes**
T	/aaroṭu raatṛi pṛaaṛthikkum? /	**Whom will you pray?**
C	/daivam/	**To god**
T	/e<u>n</u>tu pṛaaṛthikkum? /	**What will you pray?**
C	.....**unanalysed**	**Unintelligible utterance**
T	/ooṇam eŋane u<u>n</u>taayiru<u>nn</u>u? /	**How was Onam festival?**
C	/ooṇam/	**Onam**
T	/nere irikku parayu, ooṇam eŋane u<u>n</u>taayiru<u>nn</u>u?/	**Sit properly,** **Tell me,** **How was Onam?**
C	/koḷḷaam/	**Good**
T	/avadhi kiṭṭiyo?/ q	**Did you get holidays?**
C	/kiṭṭi/	**Got**
T	/etṛa divasam? /	**How many days?**
C	/pa<u>tt</u>u divasam/	**10 days**
T	/e<u>n</u>tu ceytu? /	**What did you do?**
C	/aṭicupoḷiccu/	**Enjoyed**
T	/amma sadya u<u>n</u>taakkiyo?/	**Did mother prepare sadya at home?**
C	/u<u>n</u>taakki/	**Made**
T	/e<u>n</u>tokke u<u>n</u>taakki? /	**What all curries did she prepare?**
C	/coor, saambaar,aviyal, thoran/	**Rice, sambar, avail, thoran**
T	/paayasam u<u>n</u>taayiru<u>nn</u>o? /	**There was no payasam?**
C	/u<u>n</u>taayiru<u>nn</u>u/	**Was there**

T	/eetu paayasam? /	**Which payasam?**
C	/aṭa .....paayasam/	**Ada payasam**
T	/pappaṭam u<u>n</u>taayiru<u>nn</u>o? /	**There was no pappadam?**
C	/u<u>n</u>taayiru<u>nn</u>u/	**Yes**
T	/e<u>n</u>tu ka<u>l</u>iccu? /	**What did u play?**
C	..... **unanalyzed**	**Not intelligible**
T	/atha pookkaḷam iṭṭo? /	**Did you do pookkalam?**
C	/iṭṭu/	**Did**
T	/aaru sahaayiccu? /	**Who helped you?**
C	/ammayum.... cecciyum/	**Mother and sister**
T	/putiya sinima ka<u>n</u>tu? /	**Did u see new film?**
C	/ka<u>n</u>tu/	**Saw**
T	/viiṭṭil aano ka<u>n</u>tatu? /	**Where did u see? At home?**
C	/illa/	**No**
T	/pinne eviṭe/	**Then ,where**
C	..... **unanalyzed**	**Not intelligible**
T	/eetu sinima? /	**Which film**
C	/pulimurugan/	**Pulimurugan**
T	/aara naṭan? /	**Who is the actor**
C	/laalettan /	**Mohanlal**
T	/laaleṭṭan naṭanaaṇo, naṭiyaano? /	**Is laalettan actor or actress**
C	/naṭan/	**Actor**
T	/appool, manju aanṛi? /	**Then who is Manju aunt?**
C	/naṭan/	**Actor**
T	/viiṭṭil, ṭiiviyil eetu sinima ka<u>n</u>tu?/	**Which film did you see in TV at home?**
C	/baahubali/	**Baahubali**
T	/sinima iṣtaayo? /	**Did you like the film?**
C	/iṣtaayi/	**Liked**
T	/ooṇattinu eviṭe poyi? /	**Where did you go on onam holidays?**
C	/poyi/	**Went**
T	/parayu...eviṭe poyi? /	**Tell me, mole where did u go?**

C	/aanṛiiṭe ....viiṭil/	**Aunt's house?**
T	/vinooadaatrakku pooyo? /	**Did you go for picnic during onam?**
C	/pooyi/	**Gone**
T	/aaruṭe kooṭe pooyi?/	**With whom did you go?**
	/accan , amma, ceecci/	**Father, mother ,sister**
T	/eŋane poyi? /	**How did you go?**
	/kaaṛil /	**Car**
T	/etṛa divasaŋgal aviṭe uṉtaayiruṉṉu? /	**How many days did u spent?**
	/raṉtu divasam/	**2**
T	/eviṭe okke poyi? /	**Which all places did you visit?**
c	/meesium, kaṭal/	**Zoo(not intelligible) , Museum and beach**
T	/mrugasáala istappeṭṭo? /	**Did you like zoo?**
	/iṣtappeṭṭu/	**Yes liked**
T	/mrugasáalayil eṉtu kaṉtu? /	**What did you see in the zoo?**
c	/muyal, puḷi/ e2, 2	**Rabbit, lion(unintelligible), tiger**
T	/pinne eṉtokke kaṉtu? /	**What else did you see?**
c	/maan, mutala, kaṛaṭi/ e3, 3	**Deer, crocodile, bear**
T	/pinne? /	**Only that much?**
c	/aah/	**Yes**
T	/aanaye kaṉtoo? /	**Didn't you see elephants?**
c	/kaṉtu/	**Saw**
T	/etṛa aanakal uṉtaayiruṉṉu? /	**How many elephants were there?**
c	/orupaaṭu, jiṛaaphine kaṉtu/	**Many, saw giraffe**
T	/jiṛaaph cheṛuthaaṉo kaaṇaan? /	**Is giraffe short to see?**
c	/alla, pokkamuṉtu/	**No, tall**
T	/eṉtokke pakṣikaḷe kaṉtu? /	**What all birds did you see?**
c	/taṯta……mayil…..taaṛaavu/	**Parrot, peacock, duck**
T	/pinne? /	**Then?**
c	/peeṛu aṛiyilla/	**Don't know names**
T	/mrugasáala eŋane uṉtu kaaṇaan? /	**How was the zoo?**
c	/sooppar/	**super**

T	/paambukaḷe kaṉtoo? /	**Did you see snakes?**
c	/kaṉtu /	**Saw**
T	/entu tooṉṉi? /	**What did u feel?**
c	/peeṭiyaayi/	**Fear**
T	/karaññoo? /	**Did you cry?**
c	/illa/	**No**
T	/meenukal kaṉtoo? /	**Did you see fishes?**
c	/kaṉtu /	**Yes**
T	/paaṛkkil kaliccoo? /	**Did you play in park?**
c	/kaliccu/	**Yes.**
T	/entu koṉtu? /	**Why?**
c	/valiya paaṛkku…….orupaaṭu ooññaal uṉtu /	**Big park, many swings**
T	/entu kaliccu? /	**What did you eat?**
c	/aiskṛeam kaliccu/	**Ate ice-cream**
T	/etṛa aiskṛeam? /	**How many ice-creams?**
c	…. **Symbolic** noise	**laughs**
T	/parayu? /	**Tell me**
c	/mooṉṉu /	**Three**
T	/yaatṛa iṣtamaayoo? /	**Did u enjoy the trip?**
c	/aah/	**Yes**
T	/itu eṉta/	**What is this?** **Showed toy aeroplane**
C	/vimaanam /	**Aeroplane**
T	/aaruṭe? /	**Whose aeroplane is this?**
C	/aanṛiiṭe/	**Aunt's**
T	/vimaanam Kaṉtituṉṭo? /	**Have you seen aeroplane?**
C	/kaṉtituṉṭu/	**Have seen**
T	/vimaanam rooḍil kooṭe pookumo? /	**Will aeroplane go through road?**
C	/illa/	**No**
T	/piṉṉe? / **other**	**Then?**
C	/aakaaśam/	**Sky**
T	/ooṭṭo aaṇoo vimaanamaaṇo valutu? /	**Which is big, auto or aeroplane?**
C	/vimaanam/	**Plane**

T	/ooṭṭooyil pooyiṭṭunto? /	**Have you gone in auto?**
C	/poyiṭṭunṭu/	**Have gone**
T	/ooṭṭookku etṛa viilukal untu? /	**How any wheels are there for auto?**
C	/naalu/	**4**
T	/naalaanoo? onnumkooṭi eṇṇu? /	**Is it four? Count the wheels properly?**
C	/alla.....moonnu/	**3**
T	/ii citṛattil aarokke untu? /	**good girl...see this picture (in the phone)and tell me what is this**
C	/haay. phoṇu.....taa/	**Hi .phone ...give**
T	/phoṇu pinne taraam, parayu aarokke untu? /	**I will give you,** **Tell me what u see?**
C	/paaṛkku/	**Park**
T	/aarokke? /	**Ok, who are there in park?**
C	/aanṛi....aŋkiḷ.....ceeṭṭan, ceecci/	**Uncle, aunt ,boy, girl**
T	/peṇkuṭṭi entu ceyyunnu/	**What is girl doing?**
C	/baaḷ.....kaḷikkunnu/	**Playing ball**
T	/itu enta? /	**What is this?**
C	/itu..... kiḷiaaṇu/	**This a bird**
T	/itu enta? /	**What is this?**
C	/itu.....kiḷiyalla/	**This is not a bird**
T	/kiḷikaḷ entu ceyyunnu/	**What are birds doing?**
C	/kaḷikkunnu/	**Eating food**
T	/aanṛi eviṭe pookunnu? /	**Where is aunt going?**
C	/pookunnu/	**Going**
T	/aanṛiiṭe baagil entu untu? /	**What is there in aunt's bag?**
C	/malakkari/	**Vegetables**
T	/itu aaṛaa? /	**Who is this?**
C	/aŋkiḷ/	**Uncle**
T	/aŋkil entu ceyyunnu? /	**What is uncle doing?**
C	/vaayikkunnu/	**Reading**
T	/entu vaayikkunnu? /	**What is he reading?**

C	/patram/	**Newspaper**
T	/ eviṭe irikkunnu? /	**What is dog doing?**
C	/ooṭunnu/	**Running**
T	/neere irikku, itu enta? /	**Sit properly, What is this? shows toy cooking set with stove vegetables, egg ,fruits and knife and spatula**
C	/aṭuppu.....muṭṭa,malakkari.....palam...kathi.....tavi/	**Stove. pan, egg, vegetables, fruits ,knife, spatula,**
T	/enta untaakkan pokunnatu/	**What are you preparing?**
C	/muṭṭa/	**Egg**
T	/entu untaakkum/	**What will you make with egg?**
C	/kaaḷakaṇṇu/	**Bulls eye**
T	/eŋane untaakkum? /	**How will you do?**
C	..... zero response	**.....was busy with playing it**
T	/parayu, eŋane ceyyum? /	**Answer me How will you do**
C	/kallil.....mutta.....oḷikkum...fry.....pinne.....edukkum/	**Pan, put egg, fry...will take**
T	/kaabej eŋane muṛikkum? /	**show me how will you cut cabbage with knife**
C	/śeṛi/	**Ok**
T	/caaya untaakkaan aṛiyamo? /	**Do you know how to prepare tea?**
C	/illa/	**No**
T	/nere irikku, caaya untaakkaan aṛiyaamo? /	**Sit properly ,do you know how to make tea**
C	.....	**.....**
T	/oru tiiccaṛ, orupaaṭu? /	**One teacher, many?**
C	/tiiccaṛ/	**Teacher**
T	/biina tiiccaṛ entu paraññu? /	**What did beena teacher tell?**
C	/nannai paṛayaṇam/	**To tell well**
T	/meeśayil veḷḷam viinaaḷ entu ceyyum? /	**If water spill over on table, what will you do?**

C	/veḷḷam viiṇaal tuṭakkum/	**If water is there , will wipe**
T	/oru śiṣyan/, orupaaṭu? /	**One disciple, many**
C	……	**Disciple(not intelligible and wrong too)**
T	/mumbiloo̱ṭṭu vaa, ṣarṭṭiṇṛe niṛam e̱ntaa? /	**Come forward, What is your shirt's colour?**
C	/veḷḷa/	**white**
T	/paaṇṛinte niṛam e̱ntaa? /	**What is your pants colour?**
C	/niila/	**blue**
T	/baalinṛe niṛam e̱ntaa/	**What's the colour of ball?**
C	/cuvappu/	**Red**
T	/aanayuṭe niṛam e̱ntaa? /	**What is the colour of elephant?**
C	/kaṛuppu/ /aanṛi ite̱ntaa?/	**Black ,aunt what is this ?(pointing Hp tablet)**
T	/Itu tablet phoṇu, mobail phoṇu poole, pakṣe mobailine kaal valutaanu/	**This is tablet , like mobile phone, but bigger than mobile**
C	/aah/	**Ok**
T	/aanṛiyuṭe kooṭe kaḷikkaan istamaaṇoo?/	**Did you like playing with aunt?**
C	/iṣtamaaṇu/	**Liked**
T	/aanṛiyuṭe koote varuṉṉoo/	**Are you coming with aunt?**
C	/illa/	**No**
T	/aanṛiye oorkkumoo? /	**Will you remember aunt?**
C	/aah/	**yes**
T	/taaṛa parayu/	**Say Tata**
C	/taaṛa/	**Tata**

Quantitative information:
CWID
(Total number of therapist's stimuli= 150)
Total number of sentence = 146
Mean number of sentences $= \frac{total\ number\ of\ therapist's\ stimuli}{}$
= 146/150
= 0.97

Mean sentence length = *total number of words /total number of child's sentences*

= 327 ÷ 146
=2.23

Unanalyzed 3

1. Unintelligible: 2
2. Symbolic noise: 1
3. Deviant:

Problematic

1. Incomplete: 0
2. Ambiguous: 0

Questions:

Others

- Repetitions:
- Full elliptical 1: 92 (184 words)
- Full elliptical 2: 35 (70)
- Full elliptical 3+: 19 (30)
- Full major:
- Minor: 1
- Structural:
- Zero: 3
- Problems: total words= 148

Spontaneous: 1

Social minor:

Stereo types:

Problems: 0

APPENDIX - IV

Analysis of DP's transcript:

Response types and quantitative information

(Scans, 1, 2, & 3):

As can be observed from the Appendix 3, DP produced 146 sentences of which only 3 utterances were analyzable. 150 questions and 10 other stimuli were provided, indicating a higher proportion of question stimuli needed to elicit responses. Only 3 zero responses indicate subject's attempt at responding to nearly all stimuli. The predominant response pattern is of elliptical 1 type and usage of minor sentences. Relevance of responses was also high as structurally abnormal and problem sentences are almost absent. The whole range of utterances is not utilized. The number of spontaneous utterances is small, indicating difficulties in generating utterances on her own. This is again reflected in the mean number of sentences per turn score (0.97). The predominance of elliptical 1 response is reflected in mean sentence length (2.23). Attempts at elliptical 2 and 3 type responses do indicate possibilities of longer response range and is a sign of positive prognosis.

Syntactic aspects (Scans 4 to 14):

Appendix 3 provides the summary profile of structures used. DP showed the presence of morphophonemic structures such as vowel combinations (a+a), (i+a), (i+u). Plural markers were noticed except suffix/-kal/ and numeral suffix. She frequently used present and past tense markers, but future tense marker inconsistently. PNG markers of first person singular /ñaan/ and III person male & female / -avan,-aval/and Third person singular neutral /-atu/ were used by the subject. II person markers and third person plural and third person plural neutral were generally not found.

Except for sociative and instrumental case markers, all other case markers were used.The verb forms transitive and intransitive and Causative (e.g., /uṛakkuṉṉu/) forms were observed.

Sentence types seen in the sample were primarily Wh' question, declaratives, negations, and possession types. Evidence of adjectival use was also seen. Other syntactic aspects – conjunctions & quotatives, comparatives conditional clauses and participle constructions were not observed.

Intervention Planning

Syntactic aspects appear to be major areas of concern. The performance of this child can be evaluated by comparing it with the overall performance of TD children. The most frequently utilized structures were used for comparison to the TD group to choose major goals for intervention.

Of the types of morphophonemic structures, used most frequently by TD children, vowel combinations types like /a+aa/,/ i+aa/, /i+i/,/a+i/, and consonant combinations types were not observed in DP. Similarly, the plural markers suffixes /-ar/ and /-mar/ were not observed. Most PNG markers were observed, except for first person plural / naŋŋal /, second person singular/-nii/, second person plural /-niŋŋal/, third person plural /-avar/ and third person plural neutral/-ava/. Sociative/-oṭu/ and instrumental/-aal,-konṭu/ case markers were not observed, however, expected verb forms appear in the sample. Frequently observed sentence types - declarative, negation and possessive - were seen in DP's transcript. The important sentence types needed would be interrogatives, affirmative, reflexive, reduplicated, quotatives, and strengthening of adjectival use types. Other syntactic aspects may not form immediate intervention targets, as their use is less frequently seen in comparable TD children.

The prognostic indicators come from the pattern of response types. DP's attempts at elliptical 2 and 3 type responses and presence of at least a few spontaneous utterances support the view that the child is attempting to utilize existing language strength. Based on these observations and available data, priority intervention targets can be listed as under,

1. Plural markers: suffixes /-ar/ and /-mar/
2. PNG markers: first person plural / naŋŋal /, second person singular/-nii/, second person plural /-niŋŋal/, third person plural /-avar /and third person plural neutral/-ava/ .
3. Tense marker: strengthening of future tense
4. Case markers: Sociative/-oṭu/ / and instrumental /-aal,-konṭu /
5. Verb forms: Strengthening of causative verb forms
6. Sentence types: interrogative sentence types (yes/no), affirmative, reflexive, reduplicated, quotatives, and strengthening of adjectival use

These targets would be prioritized and act as an overall guide in long term intervention programming. Other aspects of the child and her environmental needs act as additional variables for consideration in the process of intervention. Specific targets facilitate efficient programming. Thus, a comprehensive language analysis forms the basis to begin intervention programming. Once the most frequently used structures are achieved, other less frequent structures could be taken up for intervention purposes. Periodic analyses of both quantitative and qualitative aspects will aid in effective maintenance of the identified intervention course and allows the clinician to monitor progress and assess intervention effectiveness.

APPENDIX - V

A BRIEF DESCRIPTION OF THE PSYCHOLOGICAL TESTS

MALINS INTELLIGENCE SCALE FOR INDIAN CHILDREN (MISIC)

MISIC has been adapted from the American test *Wechsler Intelligence Scale for Children (*WISC) developed by Dr. David Wechsler (1949). The Indian Scale has been constructed by Dr Arthur J. Malin (1969)**.** During adaptation, an almost total revision had to be made of the test, especially of the culturally biased verbal items. So the test was named as Intelligence Scale for Indian Children- ISIC or MISIC and used to test children on the ages of 6-15 years11 months. It is administered individually. The test comprises 12 subsets divided into two groups namely, verbal and performance.

V**INELAND SOCIAL MATURITY SCALE (VSMS)**

Vineland Social Maturity Scale (VSMS) has been one of the main psychological assessment tools for the evaluation of social and adaptive functions for several decades globally as well as in India. In addition to assessing social competence, VSMS is also used as a substitute test to assess intelligence when other core intelligence tests cannot be used due to various reasons, such as poor speech ability and in conditions where the child is not cooperative. The original version (Doll, 1953) was adapted to the Indian setting by A.J. Malin (1965) and later it saw further modification by Bharat Raj (1992) to assess children aged 0-16 years in the areas of self-help general, self-help dressing, self-help eating, self-direction, locomotion, communication, occupation, and socialization. The scale yields a social age and a social quotient, which can be considered an approximate intelligence quotient.

DEVELOPMENTAL SCREENING TEST

Bharatraj (1983) developed the Developmental Screening Test (DST) to measure mental development of children between age 0 to 15 years. The test developed correspond to the motor, speech & language, and personal-social development of a child. Test have total 88 items used for

a semi-structured interview. The interview is scheduled with the primary caregiver of the child. Scores on DST is obtained by the IQ calculator developed especially for DST to assess the level of development in a child.

SEGUIN FORM BOARD TEST

Seguin (`1856) developed Seguin Form Board Test which is a simple performance-based intelligence test using form boards to evaluate eye–hand coordination, shape concept, visual perception, and cognitive ability through nonverbal means. It is used to assess the participants' motor dexterity, visuomotor coordination, spatial organization, and speed and accuracy of performance, and can be used in children as young as 3 years. The form board consists of 10 differently shaped wooden blocks, and the participants are required to fit the differently shaped blocks into their respective slots on the form board, which can be easily administered in 10 minutes. The task administration involves three consecutive trials with an instruction to start placement of blocks. The best time from three trials is used to determine a MA from the standard chart, which is subsequently used in determination of the IQ.

APPENDIX - VI

Pictures

Utensils and cooking set

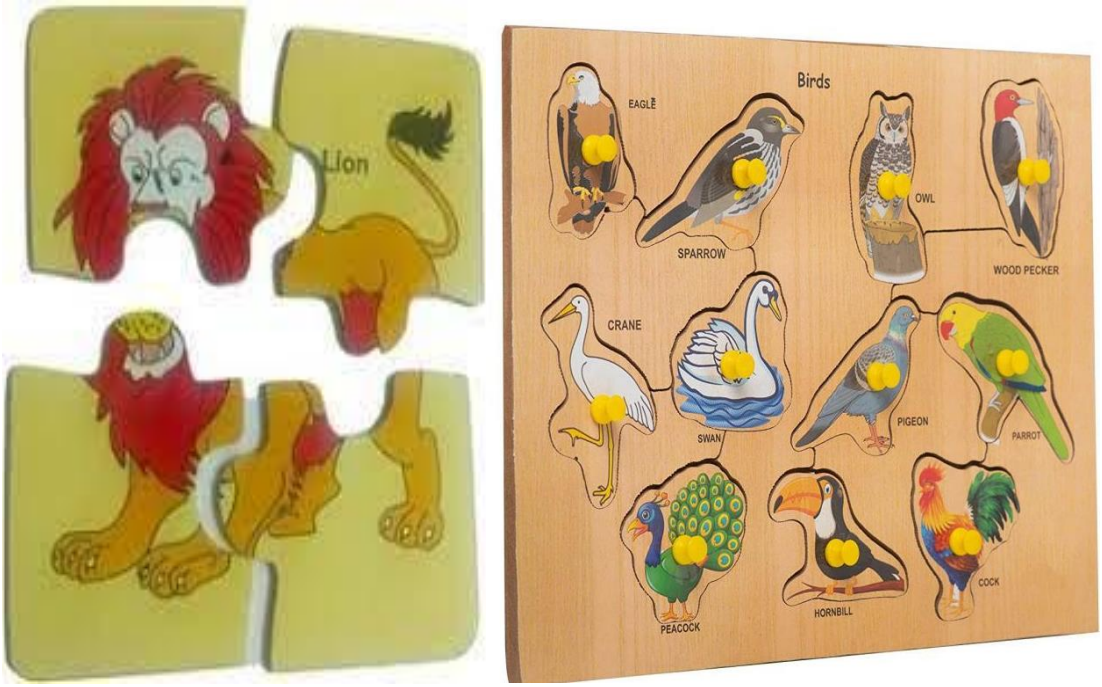
Auto

Aero plane

Ball

Doll

Coloring book



Animal and bird jig jaw puzzle set

Alarm clock Mirror

Mobile phone

Busy park

Picnic

Road traffic

APPENDIX – VII

Consent letter

I have been informed by the researcher about the purpose and procedure of the study "SYNTACTIC SKILLS IN MALAYALAM SPEAKING CHILDREN WITH INTELLECTUAL DISABILITY".

I hereby give the consent to collect data from my ward for the research.

Signature of the Parent